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(FILE 'HOME' ENTERED AT 09:11:37 ON 11 MAR 2005)

FILE 'HCAPLUS' ENTERED AT 09:11:42 ON 11 MAR 2005

L1 2 (US20040047806 OR US661748 OR US20020078857)/PN
E US2000-216933/AP,PRN
L2 2 US2000-216933P/AP,PRN
L3 2 L1-2

FILE 'REGISTRY' ENTERED AT 09:13:04 ON 11 MAR 2005

FILE 'HCAPLUS' ENTERED AT 09:13:06 ON 11 MAR 2005

L4 TRA L3 1- RN : 11 TERMS

FILE 'REGISTRY' ENTERED AT 09:13:07 ON 11 MAR 2005

L5 11 SEA L4

FILE 'WPIX' ENTERED AT 09:13:07 ON 11 MAR 2005

L6 2 (US20040047806 OR US661748 OR US20020078857)/PN
E US2000-216933/AP,PRN
L7 2 US2000-216933P/AP,PRN
L8 2 L6-7

=> b hcap

FILE 'HCAPLUS' ENTERED AT 09:13:40 ON 11 MAR 2005

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FILE COVERS 1907 - 11 Mar 2005 VOL 142 ISS 12

FILE LAST UPDATED: 9 Mar 2005 (20050309/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L3 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:203350 HCAPLUS
DN 140:219347
ED Entered STN: 14 Mar 2004
TI Unsymmetrical methine and polymethine dye-molecules for fluorescent intracellular applications
IN Theodoropoulos, Spyros
PA USA
SO U.S. Pat. Appl. Publ., 8 pp., Cont.-in-part of U.S. Ser. No. 899,888.
CODEN: USXXCO
DT Patent
LA English
IC ICM G01N001-30
ICS G01N033-48; C07D417-02; C07D043-02; C07D413-02; C07D213-57

NCL 424009600; 546268100; 546270100; 546271700; 546273400; 548121000;
546330000; 435040500

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic
Sensitizers)

Section cross-reference(s): 9, 27

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004047806	A1	20040311	US 2003-658091	20030909 <--
	US 2002078857	A1	20020627	US 2001-899888	20010706 <--
	US 6617458	B2	20030909		
PRAI	US 2000-216933P	P	20000708	<--	
	US 2001-899888	A2	20010706		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	US 2004047806	ICM	G01N001-30
		ICS	G01N033-48; C07D417-02; C07D043-02; C07D413-02; C07D213-57
		NCL	424009600; 546268100; 546270100; 546271700; 546273400; 548121000; 546330000; 435040500
	US 2004047806	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00 <--
	US 2002078857	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00 <--
AB	A new class of alpha-cyanomethine and alpha-cyanopolymethine dyes is provided having moieties which serve for the covalent attachment to biol. substrates and resulting in the fluorescent labeling of the substrates. The labeled substrates are useful in anal. techniques for the detection and measurement of biol. and clin. compds. of interest. Of particular interest is a class of methine mols. which are nonfluorescent in buffer solns. but intensely fluoresce when they enter a cell.		
ST	unsym methine polymethine dye intracellular fluorescent; cyanomethine polymethine dye prodn fluorescent label biomol		
IT	Antibodies and Immunoglobulins RL: BSU (Biological study, unclassified); BIOL (Biological study) (IgG: production of cyanomethine and -polymethine dyes for fluorescent labeling of)		
IT	Fluorescent dyes (cyanine; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)		
IT	Cyanine dyes (fluorescent; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)		
IT	Biochemical molecules Biological materials Fluorescent indicators (production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)		
IT	438582-88-8	438582-89-9	RL: TEM (Technical or engineered material use); USES (Uses) (dye: cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT	438582-86-6P	438582-87-7P	438582-90-2P RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (dye: production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT	438582-91-3P		RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (intermediate: production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT	100-10-7, 4-(Dimethylamino)benzaldehyde	141-76-4, 3-Iodopropionic acid	1497-49-0 2892-51-5, Squaric acid 13121-99-8, 4-(Cyanomethyl)pyridine RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

L3 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:487927 HCAPLUS
 DN 137:48555
 ED Entered STN: 28 Jun 2002
 TI .alpha.-Cyanomethine and polymethine dyes for fluorescent labeling of
 biological substrates
 IN Theodoropoulos, Spyros
 PA USA
 SO U.S. Pat. Appl. Publ., 8 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM C09D011-00
 NCL 106031450
 CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic
 Sensitizers)
 Section cross-reference(s): 9, 27

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002078857	A1	20020627	US 2001-899888	20010706 <--
	US 6617458	B2	20030909		
	US 2004047806	A1	20040311	US 2003-658091	20030909 <--
PRAI	US 2000-216933P	P	20000708	<--	
	US 2001-899888	A2	20010706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002078857	ICM NCL	C09D011-00 106031450
US 2002078857	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00 <--
US 2004047806	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00 <--

OS MARPAT 137:48555

AB Cyanomethine dyes are provided having moieties which serve for the covalent attachment to biol. substrates and resulting in the fluorescent labeling of the substrates. The labeled substrates are useful in anal. techniques for the detection and measurement of biol. and clin. compds. of interest. In an example, squaric acid was condensed (1:2) with 1-(2-carboxyethyl)-4-(cyanomethyl)pyridinium iodide to give a dye with excitation maximum 627 nm and emission maximum 664 nm at pH 7.8.

ST cyanomethine polymethine dye prodn fluorescent label biomol

IT Antibodies and Immunoglobulins

RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (IgG; production of cyanomethine and -polymethine dyes for fluorescent labeling of)

IT Fluorescent dyes

(cyanine; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT Cyanine dyes

(fluorescent; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT Fluorescent indicators

(production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-88-8 438582-89-9

RL: TEM (Technical or engineered material use); USES (Uses)
 (dye; cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-86-6P 438582-87-7P 438582-90-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-91-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 100-10-7, 4-(Dimethylamino)benzaldehyde 141-76-4, 3-Iodopropionic acid 1497-49-0 2892-51-5, Squaric acid 13121-99-8, 4-(Cyanomethyl)pyridine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (starting material; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

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FILE 'REGISTRY' ENTERED AT 09:13:50 ON 11 MAR 2005

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1

DICTIONARY FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

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L5 ANSWER 1 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN

RN 438582-91-3 REGISTRY

CN Pyridinium, 1-(2-carboxyethyl)-4-(cyanomethyl)-, iodide (9CI) (CA INDEX NAME)

MF C10 H11 N2 O2 . I

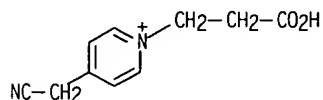
SR CA

LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

DT.CA CAplus document type: Patent

RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent)

CRN (738574-32-8)

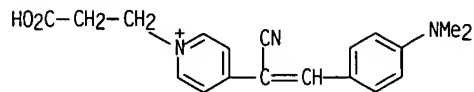


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2 REFERENCES IN FILE CA (1907 TO DATE)

2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

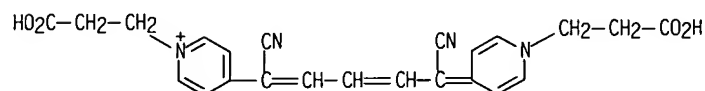
L5 ANSWER 2 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
 RN 438582-90-2 REGISTRY
 CN Pyridinium, 1-(2-carboxyethyl)-4-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-, iodide (9CI) (CA INDEX NAME)
 MF C19 H20 N3 O2 . I
 SR CA
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
 DT.CA CAplus document type: Patent
 RL.P Roles from patents: PREP (Preparation); USES (Uses)
 CRN (760938-82-7)



● I⁻

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 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

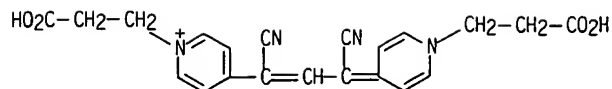
L5 ANSWER 3 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
 RN 438582-89-9 REGISTRY
 CN Pyridinium, 1-(2-carboxyethyl)-4-[5-[1-(2-carboxyethyl)-4(1H)-pyridinylidene]-1,5-dicyano-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)
 MF C23 H21 N4 O4 . I
 SR CA
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
 DT.CA CAplus document type: Patent
 RL.P Roles from patents: USES (Uses)
 CRN (790201-61-5)



● I⁻

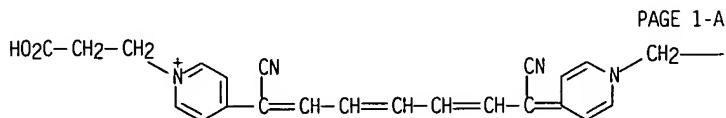
2 REFERENCES IN FILE CA (1907 TO DATE)
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 4 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
 RN 438582-88-8 REGISTRY
 CN Pyridinium, 1-(2-carboxyethyl)-4-[3-[1-(2-carboxyethyl)-4(1H)-pyridinylidene]-1,3-dicyano-1-propenyl]-, iodide (9CI) (CA INDEX NAME)
 MF C21 H19 N4 O4 . I
 SR CA
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
 DT.CA CAplus document type: Patent
 RL.P Roles from patents: USES (Uses)
 CRN (754971-33-0)



2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

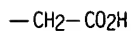
L5 ANSWER 5 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 438582-87-7 REGISTRY
CN Pyridinium, 1-(2-carboxyethyl)-4-[7-[1-(2-carboxyethyl)-4(1H)-pyridinylidene]-1,7-dicyano-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)
MF C25 H23 N4 O4 . I
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); USES (Uses)
CRN (777847-35-5)



PAGE 1-A

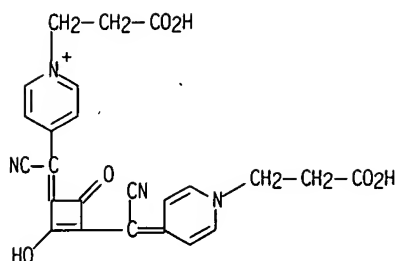


PAGE 1-B



2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

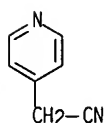
L5 ANSWER 6 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 438582-86-6 REGISTRY
CN Pyridinium, 1-(2-carboxyethyl)-4-[[3-[[1-(2-carboxyethyl)-4(1H)-pyridinylidene]cyanomethyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene]cyanomethyl]-, iodide (9CI) (CA INDEX NAME)
MF C24 H19 N4 O6 . I
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); USES (Uses)
CRN (763920-16-7)



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2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 7 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 13121-99-8 REGISTRY
CN 4-Pyridineacetonitrile (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 4-Cyanomethylpyridine
CN 4-Pyridinylacetonitrile
CN 4-Pyridylacetonitrile
FS 3D CONCORD
MF C7 H6 N2
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, GMELIN*, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
RL.NP Roles from non-patents: BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); NORL (No role in record)

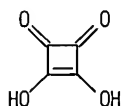


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

97 REFERENCES IN FILE CA (1907 TO DATE)
97 REFERENCES IN FILE CAPLUS (1907 TO DATE)
6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 8 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN 2892-51-5 REGISTRY
CN 3-Cyclobutene-1,2-dione, 3,4-dihydroxy- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Cyclobutenedione, dihydroxy- (6CI, 7CI, 8CI)
OTHER NAMES:
CN 1,2-Dihydroxy-1-cyclobutene-3,4-dione
CN 1,2-Dihydroxycyclobutene-3,4-dione
CN 1,2-Diketo-3,4-dihydroxycyclobutene
CN 3,4-Dihydroxy-3-cyclobutene-1,2-dione

CN 3,4-Dihydroxycyclobutene-1,2-dione
 CN NSC 125692
 CN NSC 624671
 CN Quadratic acid
 CN Squaric acid
 FS 3D CONCORD
 DR 94592-78-6
 MF C4 H2 O4
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSChem, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



****PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT****

891 REFERENCES IN FILE CA (1907 TO DATE)
 77 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 892 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 10 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 9 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
 RN 1497-49-0 REGISTRY
 CN Benzenamine, N-[5-(phenylamino)-2,4-pentadienylidene]-, monohydrochloride (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Aniline, N,N'-1,3-pentadien-1-yl-5-ylidenedi-, hydrochloride (6CI)
 CN Aniline, N,N'-1,3-pentadien-1-yl-5-ylidenedi-, monohydrochloride (8CI)
 OTHER NAMES:
 CN Glutaconaldehyde dianil chloride
 CN Glutaconaldehyde dianilide hydrochloride
 CN Glutaconic aldehyde dianil hydrochloride
 CN Pentadienedianiline hydrochloride
 MF C17 H16 N2 . Cl H
 LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSChem, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: EINECS**, NDSL**, TSCA**

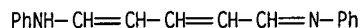
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DT.CA Caplus document type: Conference; Dissertation; Journal; Patent

RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

RL.NP Roles from non-patents: ANST (Analytical study); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

CRN (5608-83-3)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

142 REFERENCES IN FILE CA (1907 TO DATE)

142 REFERENCES IN FILE CAPLUS (1907 TO DATE)

7 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 10 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN

RN 141-76-4 REGISTRY

CN Propanoic acid, 3-iodo- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Propionic acid, 3-iodo- (6CI, 7CI, 8CI)

OTHER NAMES:

CN .beta.-Iodopropionic acid

CN 3-Iodopropanoic acid

CN 3-Iodopropionic acid

CN NSC 2124

FS 3D CONCORD

MF C3 H5 I O2

CI COM

LC STN Files: ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, GMELIN*, HODOC*, MSDS-OHS, NIOSHTIC, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

Other Sources: EINECS**, NDSL**, TSCA**

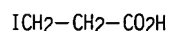
(**Enter CHEMLIST File for up-to-date regulatory information)

DT.CA Caplus document type: Conference; Journal; Patent; Report

RL.P Roles from patents: BIOL (Biological study); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)

RLD.NP Roles for non-specific derivatives from non-patents: PREP (Preparation); PRP (Properties)

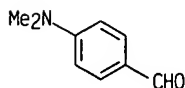


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

173 REFERENCES IN FILE CA (1907 TO DATE)

2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 173 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 17 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 11 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
 RN 100-10-7 REGISTRY
 CN Benzaldehyde, 4-(dimethylamino)- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Benzaldehyde, p-(dimethylamino)- (8CI)
 OTHER NAMES:
 CN 4-(Dimethylamino)benzaldehyde
 CN 4-(Dimethylamino)benzenecarbonal
 CN 4-(N,N-Dimethylamino)benzaldehyde
 CN 4-Formyl-N,N-dimethylaniline
 CN N,N-Dimethyl-4-aminobenzaldehyde
 CN N,N-Dimethyl-4-formylaniline
 CN N,N-Dimethyl-p-aminobenzaldehyde
 CN Named reagents and solutions, Ehrlich's
 CN NSC 5517
 CN p-(Dimethylamino)benzaldehyde
 CN p-(N,N-Dimethylamino)benzaldehyde
 CN p-DAB
 CN p-Formyl-N,N-dimethylaniline
 CN p-Formyldimethylaniline
 FS 3D CONCORD
 MF C9 H11 N O
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
 BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CSCHEM, DETHERM*, DIPPR*, EMBASE, GMELIN*,
 HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, NAPRALERT,
 NIOSHTIC, PIRA, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, USPAT2,
 USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 DT.CA Caplus document type: Conference; Dissertation; Journal; Patent; Report
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);
 OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties);
 RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical
 study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP
 (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological
 study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);
 MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);
 NORL (No role in record)
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical
 study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP
 (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or
 reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6222 REFERENCES IN FILE CA (1907 TO DATE)
 96 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

6239 REFERENCES IN FILE CAPLUS (1907 TO DATE)
19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> b wpix

FILE 'WPIX' ENTERED AT 09:13:59 ON 11 MAR 2005

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FILE LAST UPDATED: 8 MAR 2005 <20050308/UP>
MOST RECENT DERWENT UPDATE: 200516 <200516/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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FOR DETAILS. <<<

=> d all 18 tot

L8 ANSWER 1 OF 2 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2004-313882 [29] WPIX

CR 2003-119554 [11]

DNN N2004-249914 DNC C2004-119201

TI New unsymmetrical methane and polymethine dyes for the measurement and
detection of biological compounds, e.g. bacteria, have one or two cyano
groups in alpha carbon relative to nucleus of dye compounds.

DC B04 D16 E24 S03

IN THEODOROPULOS, S

PA (THEO-I) THEODOROPULOS S

CYC 1

PI US 2004047806 A1 20040311 (200429)* 8 G01N001-30 <--

ADT US 2004047806 A1 Provisional US 2000-216933P 20000708, CIP of US
2001-899888 20010706, US 2003-658091 20030909

FDT US 2004047806 A1 CIP of US 6617458

PRAI US 2000-216933P 20000708; US 2001-899888
20010706; US 2003-658091 20030909

IC ICM G01N001-30

ICS C07D213-57; C07D403-02; C07D413-02; C07D417-02; G01N033-48

AB US2004047806 A UPAB: 20040505

NOVELTY - Unsymmetrical methane and polymethine dyes bearing one or two
cyano groups in the alpha -carbon relative to the nucleus of the dye
compounds, are new.

DETAILED DESCRIPTION - Unsymmetrical methane and polymethine dyes of
formula (9) are new.

R = 1-25C, alkyl, alkenyl, aralkyl, hydroxyalkyl, alkoxyalkyl,
aryloxyalkyl, aminoalkyl, carboxyalkyl, or arylthioalkyl;

Z = group containing non-metallic atoms necessary to complete
heterocyclic or heteropolycyclic ring with the atoms to which it is

attached and may contain oxygen, nitrogen, selenium, or sulfur, up to 25C, and can be substituted with lower alkyl, nitro, halo, carboxyl, sulfonic acid, amino or phosphoric groups;

Y = group containing non-metallic atoms necessary to complete cyclic or polycyclic ring with the atoms to which it is attached and may contain nitrogen, oxygen, selenium, or sulfur and up to 25C and can be substituted with lower alkyl, nitro, halo, carboxylic, sulfonic, hydroxyl, primary amino or secondary amino groups; and

Q = =CH-, =CH-CH=CH-, or =CH-CH=CH-CH=CH- groups.

USE - For the measurement and detection of biological compounds such as bacteria, viruses, enzymes, drugs, blood groups, hormones, environmental contaminants, nucleotides, chemically modified oligo- and polynucleotides, toxins, food, genes, or cells.

ADVANTAGE - The inventive unsymmetrical methine and polymethine dyes have physicochemical properties which can label cells and other biological substrates. They are readily coupled to compounds of clinical interest. They also exhibit distinct fluorescence excitation and emission spectra, corresponding to that of the specific class of chromophores.

Dwg. 0/0

FS CPI EPI

FA AB; GI; DCN

MC CPI: B06-H; B07-H; B12-K04E; D05-H04; D05-H06A; D05-H08; D05-H09;

E07-D04A; E25-B03

EPI: S03-E09E; S03-E14H

L8 ANSWER 2 OF 2 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2003-119594 [11] WPIX

CR 2004-313882 [29]

DNC C2003-030741

TI New alpha-cyano-substituted methine and polymethine dyes, useful for fluorescent labeling of biological substrates, e.g. for detection and analysis.

DC B04 D16 E24

IN THEODOROPULOS, S

PA (THEO-I) THEODOROPULOS S

CYC 1

PI US 2002078857 A1 20020627 (200311)* 8 C09D011-00 <--

US 6617458 B2 20030909 (200361) C09D011-00

ADT US 2002078857 A1 Provisional US 2000-216933P 20000708, US 2001-899888 20010706; US 6617458 B2 Provisional US 2000-216933P 20000708, US 2001-899888 20010706

PRAI US 2000-216933P 20000708; US 2001-899888 20010706

IC ICM C09D011-00

ICS C07D401-02

AB US2002078857 A UPAB: 20040505

NOVELTY - alpha -Cyano-(poly)methine dyes (A).

DETAILED DESCRIPTION - alpha -Cyano-(poly)methine dyes (A) of formulae (I) and (II) are new.

Z = residue that completes a hetero(bi)cyclic ring, containing up to 25 carbon, oxygen, nitrogen or sulfur atoms, optionally substituted by one or more lower alkyl, nitro, halo, carboxy, sulfo or amino;

Q = CH, CH=CH, CH-CH=CH-CH=CH, or the groups (i) - (iii) (no specific points of connection is given in the specification for the groups);

Y = halo, hydroxy, thiol, amino, and optionally substituted alkoxy, aryloxy or arylthio;

R1, R2 = 1-12C alkyl, provided at least one group is substituted by sulfo, sulfato, phosphoric acid, carboxy, halo, thiol, thioether, sulfonyloxyamino, thiocyanato, hydrazino, maleimido, succinate ester, amino, or optionally substituted (hetero)aralkyl;

R3 = hydrogen or cyano;

R4 = hydroxy, thiol, phosphoric acid, primary or secondary amino;

M = up to 25C (hetero)aromatic, optionally including nitrogen.

oxygen or sulfur, and optionally substituted by one or more of lower alkyl, nitro, halo, carboxy, sulfonic or phosphoric acid groups;

X = chloro, bromo, iodo, chlorate, sulfate, acetate or propionate anion.

INDEPENDENT CLAIMS are also included for the following:

(1) method for preparing (A);

(2) conjugate of (A) with a biological substrate; and

(3) method for fluorescent labeling of a biological substrate by treating with (A).

USE - (A) are useful for covalent, fluorescent labeling of biological substrates, e.g. for measurement and detection of biological or clinical compounds or cells.

ADVANTAGE - The cyano group in (A) improves photochemical (and physiochemical) stability and fluorescent efficiency. (A) may include functional groups that allow bonding to a wide variety of substrates.

Dwg.0/0

FS CPI

FA AB: GI: DCN

MC CPI: B04-F01; B06-H; B07-H; B10-A15; B12-K04A; B12-K04E; D05-H08; D05-H09;
E24-A05; E25-B03

=> b home

FILE 'HOME' ENTERED AT 09:14:06 ON 11 MAR 2005

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=> d his

(FILE 'HOME' ENTERED AT 09:11:37 ON 11 MAR 2005)

FILE 'HCAPLUS' ENTERED AT 09:11:42 ON 11 MAR 2005

L1 2 (US20040047806 OR US661748 OR US20020078857)/PN
E US2000-216933/AP,PRN
L2 2 US2000-216933P/AP,PRN
L3 2 L1-2

FILE 'REGISTRY' ENTERED AT 09:13:04 ON 11 MAR 2005

FILE 'HCAPLUS' ENTERED AT 09:13:06 ON 11 MAR 2005
L4 TRA L3 1- RN : 11 TERMS

FILE 'REGISTRY' ENTERED AT 09:13:07 ON 11 MAR 2005

L5 11 SEA L4

FILE 'WPIX' ENTERED AT 09:13:07 ON 11 MAR 2005

L6 2 (US20040047806 OR US661748 OR US20020078857)/PN
E US2000-216933/AP,PRN
L7 2 US2000-216933P/AP,PRN
L8 2 L6-7

FILE 'REGISTRY' ENTERED AT 09:24:05 ON 11 MAR 2005

L9 STR
L10 3 L9
L11 281 L9 FULL
SAV TEM DAV091F0/A L11
SEL RN L11 5-6 14 18 29 31 33 35 38 40 42-47 53-54 56 62 66-67
L12 79 E1-79 AND L11

FILE 'HCAPLUS' ENTERED AT 09:56:09 ON 11 MAR 2005

L13 19 L12

FILE 'HCAOLD' ENTERED AT 09:56:15 ON 11 MAR 2005

L14 4 L12
SEL AN
EDIT E80-E83 /AN /OREF

FILE 'HCAPLUS' ENTERED AT 09:56:49 ON 11 MAR 2005

L15 9 E80-83
L16 26 L13 OR L15
E THEODOROPULOS S/AU
L17 35 E3-4
L18 2 L16 AND L17
L19 24 L16 NOT L18
L20 QUE PY<=2000 OR AY<=2000 OR PRY<=2000 OR PD<20000708 OR AD<2000
L21 23 L19 AND L20

=> b reg

FILE 'REGISTRY' ENTERED AT 09:59:41 ON 11 MAR 2005

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STRUCTURE FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1

DICTIONARY FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1

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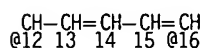
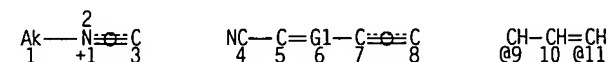
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=> d que sta l12

L9 STR



VAR G1=CH/9-5 11-7/12-5 16-7

NODE ATTRIBUTES:

CHARGE IS E+1 AT 2

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L11 281 SEA FILE=REGISTRY SSS FUL L9

L12 79 SEA FILE=REGISTRY ABB=ON PLU=ON (119926-56-6/BI OR 119926-57-7/BI OR 122569-39-5/BI OR 122569-40-8/BI OR 146963-87-3/BI OR 146963-88-4/BI OR 161882-58-2/BI OR 182011-72-9/BI OR 182011-93-4/BI OR 182011-96-7/BI OR 182012-03-9/BI OR 182012-30-2/BI OR 182012-33-5/BI OR 197080-33-4/BI OR 197080-34-5/BI OR 197080-35-6/BI OR 203445-56-1/BI OR 211060-94-5/BI OR 23226-50-8/BI OR 23226-51-9/BI OR 364047-69-8/BI OR 3730-30-1/BI OR 42905-72-6/BI OR 42905-77-1/BI OR 42905-80-6/BI OR 42905-82-8/BI OR 42905-83-9/BI OR 42905-84-0/BI OR 438582-90-2/BI OR 48221-76-7/BI OR 48222-05-5/BI OR 48224-20-0/BI OR 48227-17-4/BI OR 48230-49-5/BI OR 50379-06-1/BI OR 50379-09-4/BI OR 50575-27-4/BI OR 50575-34-3/BI OR 53035-29-3/BI OR 53035-30-6/BI OR 53035-31-7/BI OR 53035-32-8/BI OR 53092-11-8/BI OR 53092-12-9/BI OR 53092-13-0/BI OR 53092-14-1/BI OR 57716-31-1/BI OR 60834-89-1/BI OR 60834-90-4/BI OR 60834-91-5/BI OR 60834-92-6/BI OR 60834-93-7/BI OR 60871-55-8/BI OR 61037-85-2/BI OR 61502-93-0/BI OR 61502-94-1/BI OR 687608-51-1/BI OR 688729-20-6/BI OR 732932-74-0/BI OR 739314-24-0/BI OR 741632-94-0/BI OR 742006-79-7/BI OR 754957-09-0/BI OR 756773-53-2/BI OR 760131-70-2/BI OR 760882-15-3/BI OR 760889-96-1/BI OR 760938-82-7/BI OR 762261-35-8/BI OR 765883-28-1/BI OR 767612-24-8/BI OR 769900-38-1/BI OR 774496-39-8/BI OR 778554-82-8/BI OR 794479-49-5/BI OR 801187-21-3/BI OR 823216-52-0/BI OR 823216-53-1/BI OR 85929-19-7/BI) AND L11

=> b hcap

FILE 'HCAPLUS' ENTERED AT 09:59:58 ON 11 MAR 2005

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FILE COVERS 1907 - 11 Mar 2005 VOL 142 ISS 12
FILE LAST UPDATED: 10 Mar 2005 (20050310/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L18 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:203350 HCAPLUS

DN 140:219347

ED Entered STN: 14 Mar 2004

TI Unsymmetrical methine and polymethine dye-molecules for fluorescent intracellular applications

IN Theodoropoulos, Spyros

PA USA

SO U.S. Pat. Appl. Publ., 8 pp., Cont.-in-part of U.S. Ser. No. 899,888.
CODEN: USXXCO

DT Patent

LA English

IC ICM G01N001-30

ICS G01N033-48; C07D417-02; C07D043-02; C07D413-02; C07D213-57

NCL 424009600; 546268100; 546270100; 546271700; 546273400; 548121000;
546330000; 435040500

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 9, 27

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004047806	A1	20040311	US 2003-658091	20030909
	US 2002078857	A1	20020627	US 2001-899888	20010706
	US 6617458	B2	20030909		
PRAI	US 2000-216933P	P	20000708		
	US 2001-899888	A2	20010706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004047806	ICM	G01N001-30
	ICS	G01N033-48; C07D417-02; C07D043-02; C07D413-02; C07D213-57
	NCL	424009600; 546268100; 546270100; 546271700; 546273400; 548121000; 546330000; 435040500
US 2004047806	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00
US 2002078857	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00

AB A new class of alpha-cyanomethine and alpha-cyanopolymethine dyes is provided having moieties which serve for the covalent attachment to biol. substrates and resulting in the fluorescent labeling of the substrates. The labeled substrates are useful in anal. techniques for the detection and measurement of biol. and clin. compds. of interest. Of particular interest is a class of methine mols. which are nonfluorescent in buffer solns. but intensely fluoresce when they enter a cell.

ST unsym methine polymethine dye intracellular fluorescent; cyanomethine
polymethine dye prodn fluorescent label biomol

IT Antibodies and Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IgG; production of cyanomethine and -polymethine dyes for fluorescent
labeling of)

IT Fluorescent dyes
(cyanine; production of cyanomethine and -polymethine dyes for fluorescent
labeling of biomols.)

IT Cyanine dyes
(fluorescent; production of cyanomethine and -polymethine dyes for
fluorescent labeling of biomols.)

IT Biochemical molecules
Biological materials
Fluorescent indicators
(production of cyanomethine and -polymethine dyes for fluorescent labeling
of biomols.)

IT 438582-88-8 438582-89-9
RL: TEM (Technical or engineered material use); USES (Uses)
(dye; cyanomethine and -polymethine dyes for fluorescent labeling of
biomols.)

IT 438582-86-6P 438582-87-7P 438582-90-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(dye; production of cyanomethine and -polymethine dyes for fluorescent
labeling of biomols.)

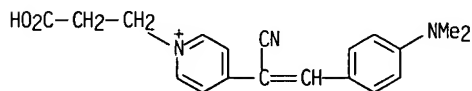
IT 438582-91-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(intermediate; production of cyanomethine and -polymethine dyes for
fluorescent labeling of biomols.)

IT 100-10-7, 4-(Dimethylamino)benzaldehyde 141-76-4, 3-Iodopropionic acid
1497-49-0 2892-51-5, Squaric acid 13121-99-8, 4-(Cyanomethyl)pyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; production of cyanomethine and -polymethine dyes for
fluorescent labeling of biomols.)

IT 438582-90-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(dye; production of cyanomethine and -polymethine dyes for fluorescent
labeling of biomols.)

RN 438582-90-2 HCAPLUS

CN Pyridinium, 1-(2-carboxyethyl)-4-[1-cyano-2-[4-
(dimethylamino)phenyl]ethenyl]-, iodide (9CI) (CA INDEX NAME)



● I⁻

L18 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:487927 HCAPLUS
DN 137:48555
ED Entered STN: 28 Jun 2002
TI .alpha.-Cyanomethine and polymethine dyes for fluorescent labeling of
biological substrates
IN Theodoropoulos, Spyros
PA USA

SO U.S. Pat. Appl. Publ., 8 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM C09D011-00
 NCL 106031450
 CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
 Section cross-reference(s): 9, 27

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002078857	A1	20020627	US 2001-899888	20010706
	US 6617458	B2	20030909		
	US 2004047806	A1	20040311	US 2003-658091	20030909
PRAI	US 2000-216933P	P	20000708		
	US 2001-899888	A2	20010706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002078857	ICM NCL	C09D011-00 106031450
US 2002078857	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00
US 2004047806	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00

OS MARPAT 137:48555

AB Cyanomethine dyes are provided having moieties which serve for the covalent attachment to biol. substrates and resulting in the fluorescent labeling of the substrates. The labeled substrates are useful in anal. techniques for the detection and measurement of biol. and clin. compds. of interest. In an example, squaric acid was condensed (1:2) with 1-(2-carboxyethyl)-4-(cyanomethyl)pyridinium iodide to give a dye with excitation maximum 627 nm and emission maximum 664 nm at pH 7.8.

ST cyanomethine polymethine dye prodn fluorescent label biomol

IT Antibodies and Immunoglobulins

RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (IgG; production of cyanomethine and -polymethine dyes for fluorescent labeling of)

IT Fluorescent dyes

(cyanine; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT Cyanine dyes

(fluorescent; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT Fluorescent indicators

(production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-88-8 438582-89-9

RL: TEM (Technical or engineered material use); USES (Uses)
 (dye; cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-86-6P 438582-87-7P 438582-90-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-91-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (intermediate; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 100-10-7, 4-(Dimethylamino)benzaldehyde 141-76-4, 3-Iodopropionic acid 1497-49-0 2892-51-5, Squaric acid 13121-99-8, 4-(Cyanomethyl)pyridine

RL: RCT (Reactant); RACT (Reactant or reagent)
 (starting material; production of cyanomethine and -polymethine dyes for

fluorescent labeling of biomols.)

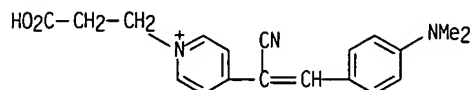
IT 438582-90-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

RN 438582-90-2 HCAPLUS

CN Pyridinium, 1-(2-carboxyethyl)-4-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-, iodide (9CI) (CA INDEX NAME)



● I-

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L21 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:79956 HCAPLUS

DN 142:116011

ED Entered STN: 31 Jan 2005

TI Quinolinium- and pyridinium-based fluorescent dye compounds for protein staining

IN Pennington, Mark William; Scopes, David Ian; Orchard, Michael Glen

PA Oxford Glycosciences UK Ltd., UK

SO U.S.. 17 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM C07D401-10

ICS C07D403-10; C07D215-12; C07D213-36; C07D213-57

NCL 544359000; 544363000; 544124000; 544128000; 546172000; 546330000; 546334000; 546194000; 546276400

CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 9, 28

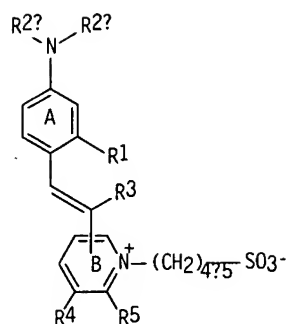
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6335446	B1	20020101	US 1999-412168	19991005 <--
	CA 2393734	AA	20040116	CA 2002-2393734	20020716 <--
PRAI	GB 1998-21682	A	19981005	<--	
	GB 1998-21683	A	19981005	<--	
	GB 1998-21684	A	19981005	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6335446	ICM	C07D401-10
	ICS	C07D403-10; C07D215-12; C07D213-36; C07D213-57
	NCL	544359000; 544363000; 544124000; 544128000; 546172000; 546330000; 546334000; 546194000; 546276400
US 6335446	ECLA	C07D213/38; C07D213/57; C07D215/12; C09B023/14H <--

GI



- AB The present invention relates to quinolinium- and pyridinium-based fluorescent dyes of formula I: wherein R1 is C1-C6 straight or branched chain alkyl, halogen or CF3; either R2a and R2b are independently C1-C20 straight or branched chain alkyl, a C1-C20 straight or branched chain aralkyl or H, R2a and R2b not simultaneously being H, or R2a and R2b are taken together and form morpholinyl, piperidinyl or pyrrolidinyl ring; R3 is H or C1-C6 straight or branched chain alkyl; and either R4 and R5 are both H, or R4 and R5 taken together are -CH:CH-CH:CH-, the aromatic rings A and B, the -(CH2)4-5- group, and the C(H):C(R3)- group being optionally substituted with one or more -OH, C1-C6 straight or branched chain alkoxy, halogen, C1-C6 straight or branched chain haloalkyl, pyridyl, thiophenyl, furyl, and Ph, the Ph being optionally substituted with one or more -OH, C1-C6 straight or branched chain alkyl or C1-C6 straight or branched chain alkoxy. The dyes are useful for staining proteins in solution, in gels and on solid supports. The dyes of the invention exhibit higher fluorescence emission than known compds. when bound to proteins and also exhibit improved contrast of fluorescence intensity between their protein-bound and unbound states.
- ST quinolinium pyridinium fluorescence dye compd
- IT Staining, biological
(fluorescent; production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)
- IT Fluorescent dyes
(production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)
- IT Proteins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)
- IT 90133-80-5P, N,N-Dihexyl-4-aminobenzaldehyde 150558-02-4P, N-Decanoyl-N'-phenylpiperazine 150558-09-1P, N-Octanoyl-N'-phenylpiperazine 823216-22-4P, N,N-Dipentyl-4-bromo-3-chloroaniline 823216-23-5P, N,N-Dipentyl-4-bromo-3-methylaniline 823216-24-6P, N,N-Dipentyl-4-bromo-3-trifluoromethylaniline 823216-26-8P, N-Decyl-4-bromo-3-trifluoromethylaniline 823216-27-9P 823216-28-0P 823216-29-1P 823216-30-4P 823216-31-5P 823216-37-1P 823216-38-2P 823216-39-3P 823216-40-6P 823216-41-7P 823216-42-8P 823216-43-9P 823216-44-0P 823216-51-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)
- IT 603-35-0, Triphenylphosphine, uses 1112-67-0, Tetra-N-butylammonium chloride 3375-31-3, Palladium diacetate 6163-58-2, Tri-o-tolylphosphine 7087-68-5, N,N-Diisopropylethylamine 56553-60-7, Sodium triacetoxyborohydride

RL: CAT (Catalyst use); USES (Uses)

(production of quinolinium- and pyridinium-based fluorescent dye compds.
for staining of proteins in solution, in gels and on solid supports)

IT 823216-32-6P 823216-33-7P 823216-34-8P 823216-35-9P 823216-36-0P
823216-45-1P 823216-46-2P 823216-47-3P 823216-48-4P 823216-49-5P
823216-50-8P 823216-52-0P 823216-53-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)

(production of quinolinium- and pyridinium-based fluorescent dye compds.
for staining of proteins in solution, in gels and on solid supports)

IT 92-54-6, N-Phenylpiperazine 100-43-6, 4-Vinylpyridine 100-69-6,
2-Vinylpyridine 110-53-2, 1-Bromopentane 110-62-3, Valeraldehyde
111-64-8, Octanoyl chloride 112-13-0, Decanoyl chloride 112-31-2,
Decanal 128-08-5, N-Bromosuccinimide 393-36-2, 4-Bromo-3-
trifluoromethylaniline 1633-83-6, 1,4-Butanesultone 4430-09-5,
N,N-Dihexylaniline 4945-29-3, 4-Vinylquinoline 6933-10-4,
4-Bromo-3-methylaniline 21402-26-6, 4-Bromo-3-chloroaniline
90134-10-4, N,N-Dibutyl-4-aminobenzaldehyde 92333-25-0,
4-Acetonitrilepyridine hydrochloride

RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; production of quinolinium- and pyridinium-based
fluorescent dye compds. for staining of proteins in solution, in gels and
on solid supports)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; EP 0548798 1993 HCAPLUS

(2) Anon; WO 9636882 WO 1996 HCAPLUS

(3) Anon; WO 9823950 WO 1998 HCAPLUS

(4) Basili; Dissertation Abstracts, Ph D Thesis, University of Washington 1997,
V58(12-B), P6686

(5) Haugland; US 5616502 A 1997 HCAPLUS

(6) Prasad; US 5912257 A 1999 HCAPLUS

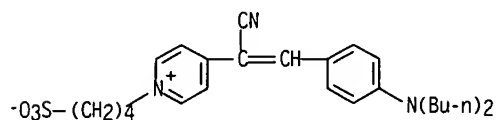
IT 823216-52-0P 823216-53-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)

(production of quinolinium- and pyridinium-based fluorescent dye compds.
for staining of proteins in solution, in gels and on solid supports)

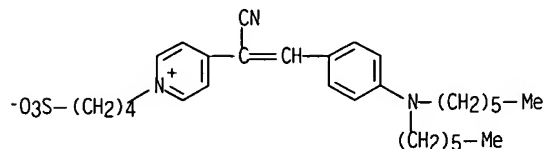
RN 823216-52-0 HCAPLUS

CN Pyridinium, 4-[1-cyano-2-[4-(dibutylamino)phenyl]ethenyl]-1-(4-sulfobutyl)-
inner salt (9CI) (CA INDEX NAME)



RN 823216-53-1 HCAPLUS

CN Pyridinium, 4-[1-cyano-2-[4-(dihexylamino)phenyl]ethenyl]-1-(4-sulfobutyl)-
inner salt (9CI) (CA INDEX NAME)



L21 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1998:527389 HCAPLUS

DN 129:167911
 ED Entered STN: 21 Aug 1998
 TI Nonlinear optical films from pairwise-deposited semi-ionomeric syndioregic polymers
 IN Lindsay, Geoffrey A.; Wynne, Kenneth J.; Smith, John D. Stenger; Chafin, Andrew P.; Hollins, Richard A.; Roberts, Marion J.; Zarras, Peter
 PA United States Dept. of the Navy, USA
 SO PCT Int. Appl., 51 pp.
 CODEN: PIXXD2

DT Patent

LA English

IC ICM C09K019-02

ICS C09K019-48; B05D001-20

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 75

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9832813	A1	19980730	WO 1997-US23990	19971222 <--
W: JP, KP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5882785	A	19990316	US 1997-800943	19970123 <--
PRAI US 1997-800943	A	19970123	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9832813	ICM	C09K019-02
	ICS	C09K019-48; B05D001-20
WO 9832813	ECLA	B05D001/20C; G02F001/361F2; G02F001/361L <--
US 5882785	ECLA	B05D001/20C; G02F001/361F2; G02F001/361L <--

AB Polarized films are described which comprise asym. chromophores linked head-to-head by alternating two different kinds of bridging groups. One of the bridging groups contains one or more ionic groups, and the other bridging group contains one or more non-ionic, hydrophilic groups. The chromophores may be nonlinear optical chromophores. Langmuir-Blodgett (LB) film deposition methods are also described in which a layer of a nonaq. solution of one polymer is spread on a subphase of an aqueous solution of the other in a Langmuir-Blodgett trough, a mol. bilayer of the two polymers is allowed to form by waiting 1-60 min, and the bilayer is then compressed while maintaining a gas-liquid surface pressure of 20-90% of the min. pressure required to collapse the bilayer; a multilayered film may then be formed by repeated dipping of a substrate. An electrooptical film which has never undergone elec.-field poling nor high temperature treatment may be produced. This eliminates the dilution effect of the long hydrophobic alkyl groups, and creates stronger ionic bonds between the polymer chains and reduces the time to make a film of a given thickness by at least half by virtue of depositing two polymer layers per stroke.

ST nonlinear optical Langmuir Blodgett film; syndioregic polymer Langmuir Blodgett film

IT Coating process

(Langmuir-Blodgett; nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT Langmuir-Blodgett films

Langmuir-Blodgett multilayers

Nonlinear optical materials

(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT Optical films

(optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT Polymers, uses

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(syndioregic; nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT 211060-90-1P 211060-94-5P

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)

(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT 3216-88-4 211060-89-8 211060-91-2 211060-92-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT 211060-93-4P 211060-95-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Cabrera; US 5517350 A 1996 HCAPLUS

(2) Decher; US 5208111 A 1993

(3) Hall; US 5162453 A 1992 HCAPLUS

(4) Masse; US 5397508 A 1995 HCAPLUS

(5) Penner; US 5245602 A 1993

(6) Stenger-Smith; US 5247055 A 1993 HCAPLUS

(7) Wynne; US 5520968 A 1996 HCAPLUS

IT 211060-94-5P

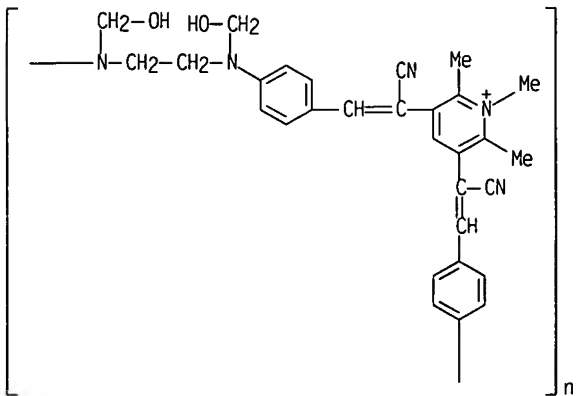
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)

(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

RN 211060-94-5 HCAPLUS

CN Poly[(hydroxymethyl)imino]-1,2-ethanediyl[(hydroxymethyl)imino]-1,4-phenylene(2-cyano-1,2-ethenediyl)(1,2,6-trimethylpyridinium-3,5-diyl)(1-cyano-1,2-ethenediyl)-1,4-phenylene iodide] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

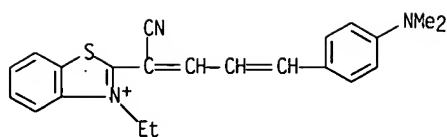
● I -

AN 1998:79573 HCAPLUS
 DN 128:177903
 ED Entered STN: 11 Feb 1998
 TI Reagents for determining reductive nicotinamide coenzyme
 IN Chousa, Satoshi; Iwasaki, Hitoshi; Ono, Mashashi
 PA Iwasaki, Hitoshi, Japan; Kyoto Daiichi Kagaku Co., Ltd
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G01N033-50
 ICS G01N021-78
 CC 9-15 (Biochemical Methods)
 Section cross-reference(s): 7, 13
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10031018	A2	19980203	JP 1996-184977	19960715 <--
JP 1996-184977		19960715 <--		

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 10031018	ICM	G01N033-50
	ICS	G01N021-78

 OS MARPAT 128:177903
 AB A reagent contains a styryl pigment, and it reacts with reductive nicotinamide coenzyme of test fluids. The discoloration caused by the coenzyme in the presence of electron transporting agent, and the change in light absorption in the visible region are measured and correlated with the activity of the enzyme. For example, a pigment used is 2-[1-cyano-4-(4-dimethylaminophenyl)-1.3-butadienyl]-3-ethylbenzothiazolium iodide, and the electron transporting agent is diaphorase.
 ST nicotinamide coenzyme detn styryl pigment spectrophotometry
 IT Pigments, nonbiological
 (reagents for determining reductive nicotinamide coenzyme)
 IT Spectrophotometry
 (reagents for determining reductive nicotinamide coenzyme by)
 IT 203445-56-1
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (as pigment reagents for determining reductive nicotinamide coenzyme)
 IT 9001-68-7, Diaphorase 9079-67-8, Diaphorase
 RL: AMX (Analytical matrix); ANST (Analytical study)
 (pigment reagents for determining reductive nicotinamide coenzyme in presence of)
 IT 53-57-6
 RL: ANT (Analyte); ANST (Analytical study)
 (reagents for determining reductive nicotinamide coenzyme)
 IT 203445-56-1
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (as pigment reagents for determining reductive nicotinamide coenzyme)
 RN 203445-56-1 HCAPLUS
 CN Benzothiazolium, 2-[1-cyano-4-[4-(dimethylamino)phenyl]-1.3-butadienyl]-3-ethyl-, iodide (9CI) (CA INDEX NAME)



● I -

L21 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:621787 HCAPLUS

DN 127:292829

ED Entered STN: 29 Sep 1997

TI Heterocycles as donor and acceptor units in push-pull conjugated molecules. Part 1

AU Bradamante, Silvia; Facchetti, Antonio; Pagani, Giorgio A.

CS Dipartimento di Chimica Organica e Industriale dell'Universita di Milano and Centro CNR Speciali Sistemi Organici, Milan, I-20133, Italy

SO Journal of Physical Organic Chemistry (1997), 10(7), 514-524

CODEN: JPOCEE; ISSN: 0894-3230

PB Wiley

DT Journal

LA English

CC 22-9 (Physical Organic Chemistry)

Section cross-reference(s): 41, 73

AB The synthesis and spectroscopic investigation of a number of push-pull ethenes in which the donor moiety is represented by a .pi.-excessive five-membered heterocycle (pyrrole, indole and thiophene) and the acceptor group is a .pi.-deficient heterocyclic azine ring (pyridine, pyrazine, pyrimidine, pyridazine) are described. The intramol. charge transfer in both the neutral compds. and the corresponding N-alkylpyridinium triflates is discussed and confirmed on the basis of three different descriptors, .DELTA..lambda.HetPh, .DELTA..lambda.+n, and .DELTA..lambda.solv2solv1, that take into account the substitution of a Ph with a heterocyclic donor ring, charge effects and solvatochromism, resp. According to the .DELTA..lambda.HetPh descriptor, the intramol. charge transfer in the described diheteroarylethenes increases upon increasing the electron-withdrawing capacity of the acceptor, sustained by the presence of either more than one nitrogen atom or the pos. charge in the heterocyclic azine. The described pyridinium derivs. belong to the rarely investigated class of dimethine cyanine dyes. The response of the ¹³C and ¹⁵N NMR chemical shift data appears to be less clear because of the low sensitivity of the NMR probes to remote substitution.

ST UV heterocyclic push pull conjugated ethene; intramol charge transfer diheteroarylethene; dimethine cyanine dye UV; solvatochromism heterocyclic push pull conjugated ethene; donor acceptor ethene heterocyclic UV

IT Cyanine dyes

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (dimethine; heterocycles as donor and acceptor units in push-pull conjugated ethenes)

IT Electron acceptors

Electron donors

Solvatochromism

UV and visible spectra

(heterocycles as donor and acceptor units in push-pull conjugated ethenes)

IT Heterocyclic compounds

Pyridinium compounds

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (heterocycles as donor and acceptor units in push-pull conjugated ethenes)

- IT Electron transfer
(intramol.: heterocycles as donor and acceptor units in push-pull conjugated ethenes)
- IT NMR (nuclear magnetic resonance)
(¹³C and ¹⁵N: heterocycles as donor and acceptor units in push-pull conjugated ethenes)
- IT 1834-86-2P 23260-04-0P 197080-20-9P 197080-25-4P 197080-30-1P 197080-31-2P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)
- IT 194220-89-8P 197080-21-0P 197080-22-1P 197080-23-2P 197080-27-6P 197080-29-8P 197080-32-3P 197080-34-5P 197080-36-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)
- IT 108-89-4, 4-Picoline 109-06-8, 2-Picoline 109-08-0, Methylpyrazine 333-27-7, Methyl triflate 872-85-5, 4-Pyridinecarboxaldehyde 1192-58-1, N-Methylpyrrole-2-carboxaldehyde 1632-76-4, 3-Methylpyridazine 2026-42-8, Diethyl 2-thienylmethylphosphonate 2739-97-1, 2-Pyridylacetonitrile 3438-46-8, 4-Methylpyrimidine 13121-99-8, 4-Pyridylacetonitrile 19012-03-4, N-Methylindole-3-carboxaldehyde 66143-72-4, Cetyl triflate
RL: RCT (Reactant); RACT (Reactant or reagent)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)
- IT 197080-38-9P 197080-40-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)

RE.CNT 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

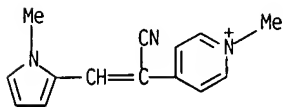
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 IT 197080-34-5P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (heterocycles as donor and acceptor units in push-pull conjugated ethenes)
 RN 197080-34-5 HCAPLUS
 CN Pyridinium, 4-[1-cyano-2-(1-methyl-1H-pyrrol-2-yl)ethenyl]-1-methyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 197080-33-4

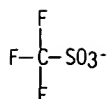
CMF C14 H14 N3



CM 2

CRN 37181-39-8

CMF C F3 O3 S



L21 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1996:616096 HCAPLUS
 DN 125:261111
 ED Entered STN: 17 Oct 1996
 TI Silver halide photographic material and rapid development process
 IN Honda, Mari; Oonishi, Akira; Tanaka, Tatsuo; Komamura, Tawara
 PA Konishiroku Photo Ind., Japan; Konica Minolta Holdings Inc.
 SO Jpn. Kokai Tokkyo Koho. 41 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03C001-83
 ICS G03C001-06; G03C005-26
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

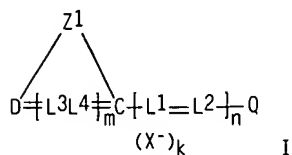
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08179467	A2	19960712	JP 1994-323063	19941226 <--
	JP 3467658	B2	20031117		
PRAI	JP 1994-323063		19941226 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 08179467	ICM	G03C001-83
	ICS	G03C001-06; G03C005-26

GI



AB The Ag halide photog. material has .gtoreq.1 nonphotosensitive hydrophilic colloidal layer on a support containing a dispersion of solid dye microparticle whose chemical formula is represented by I (D = N, N+R1; R1 = H, alkyl, alkenyl, O+, S+; Z1 = nonmetallic atomic group forming heterocyclyl; Q = aryl, heterocyclyl; X- = anion; k = 0, 1; m = 0, 1; n = 1-3; L1-4 = methine). The process is carried out in the total processing time of .ltoreq.90 s. The photog. material showed little fogging and exhibited image sharpness.

ST silver halide photog material rapid processing

IT Photographic development

Photographic emulsions

(silver halide photog. material and rapid development)

IT 182011-70-7 182011-72-9 182011-75-2 182011-79-6
 182011-83-2 182011-86-5 182011-89-8 182011-92-3 182011-94-5
 182011-95-6 182011-96-7 182011-98-9 182012-00-6
 182012-01-7 182012-02-8 182012-03-9 182012-05-1
 182012-07-3 182012-08-4 182012-12-0 182012-14-2 182012-17-5
 182012-21-1 182012-25-5 182012-27-7 182012-30-2

182012-33-5 182012-36-8 182012-39-1 182012-42-6
 182012-45-9 182012-48-2 182012-52-8 182012-53-9 182012-54-0
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)

(dispersion of dye particles in silver halide photog. material)

IT 182011-93-4

RL: DEV (Device component use); MOA (Modifier or additive use); PEP
 (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (dispersion of dye particles in silver halide photog. material)

IT 182011-72-9 182011-96-7 182012-03-9

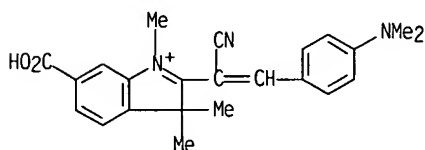
182012-30-2 182012-33-5

RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)

(dispersion of dye particles in silver halide photog. material)

RN 182011-72-9 HCAPLUS

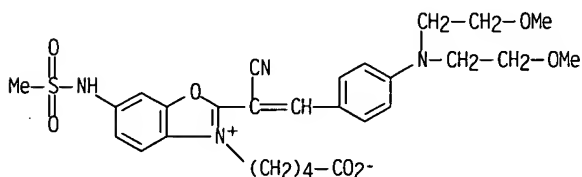
CN 3H-Indolium, 6-carboxy-2-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-
 1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)



● I⁻

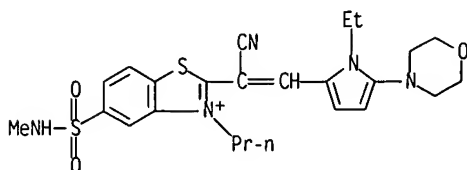
RN 182011-96-7 HCAPLUS

CN Benzoxazolium, 2-[2-[4-[bis(2-methoxyethyl)amino]phenyl]-1-cyanoethenyl]-3-(4-carboxybutyl)-6-[(methylsulfonyl)amino]-, inner salt (9CI) (CA INDEX NAME)



RN 182012-03-9 HCAPLUS

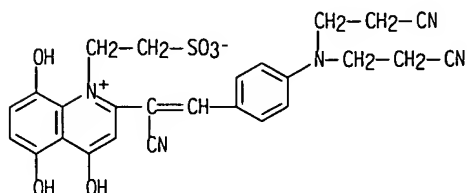
CN Benzothiazolium, 2-[1-cyano-2-[1-ethyl-5-(4-morpholinyl)-1H-pyrrol-2-yl]ethenyl]-5-[(methylamino)sulfonyl]-3-propyl-, iodide (9CI) (CA INDEX NAME)



● I⁻

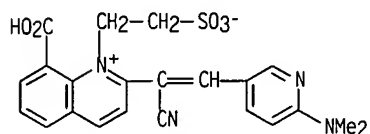
RN 182012-30-2 HCAPLUS

CN Quinolinium, 2-[2-[4-[bis(2-cyanoethyl)amino]phenyl]-1-cyanoethenyl]-4,5,8-trihydroxy-1-(2-sulfoethyl)-, inner salt (9CI) (CA INDEX NAME)



RN 182012-33-5 HCAPLUS

CN Quinolinium, 8-carboxy-2-[1-cyano-2-[6-(dimethylamino)-3-pyridinyl]ethenyl]-1-(2-sulfoethyl)-, inner salt (9CI) (CA INDEX NAME)

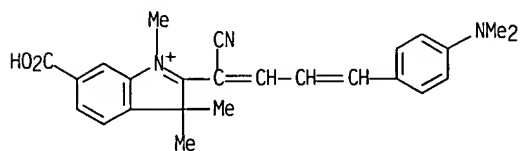


IT 182011-93-4

RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (dispersion of dye particles in silver halide photog. material)

RN 182011-93-4 HCAPLUS

CN 3H-Indolium, 6-carboxy-2-[1-cyano-4-[4-(dimethylamino)phenyl]-1,3-butadienyl]-1.3.3-trimethyl-, iodide (9CI) (CA INDEX NAME)



● I -

L21 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1995:300246 HCAPLUS

DN 122:216578

ED Entered STN: 19 Jan 1995

TI Cationic dyes with improved water solubility

IN Yamazaki, Mitumasa

PA Hodogaya Chemical Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09B023-00

CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

Section cross-reference(s): 43

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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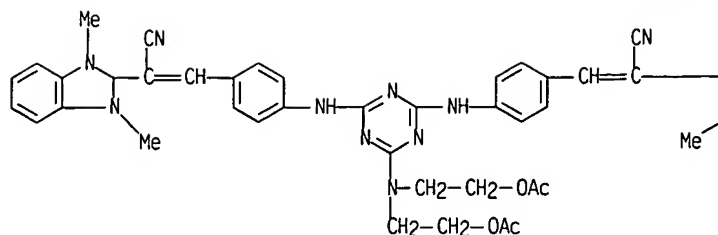
PI JP 06287458 A2 19941011 JP 1993-93938 19930330 <--
 JP 3167825 B2 20010521
 PRAI JP 1993-93938 19930330 <--
 CLASS
 PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

 JP 06287458 ICM C09B023-00
 JP 06287458 ECLA C09B023/14B <--
 OS MARPAT 122:216578
 GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

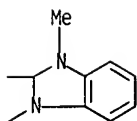
AB The title dyes I [A = quaternized active methylene group-containing compound residue; X = H, Me, CN; B = (substituted) benzene ring; Y- = anion; m + n = 2; m = 0, 1] are useful for dyeing natural and synthetic materials, e.g., paper, pulps, acrylic fibers. Thus, N-methylpicolinium methylsulfate was reacted with 4-H₂NC₆H₄CHO to give II, which was reacted with cyanuric chloride in water in the presence of Na₂CO₃, then treated with diethanolamine to give III having λ_{max} 421 nm.
 ST triazine cationic dye water sol; acetylated hydroxylamine triazine cationic dye; pulp dyeing triazine cationic dye
 IT Pulp, cellulose
 (bleached; cationic dyes with improved water solubility)
 IT Acrylic fibers, miscellaneous
 RL: MSC (Miscellaneous)
 (cationic dyes with improved water solubility)
 IT Dyes
 (cationic, cationic dyes with improved water solubility)
 IT 161882-52-6P 161882-53-7P 161882-54-8P 161882-55-9P 161882-56-0P
 161882-57-1P 161882-58-2P 161882-59-3P 161882-60-6P
 161882-62-8P 161882-63-9P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (cationic dyes with improved water solubility)
 IT 123038-30-2P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of cationic dyes with improved water solubility)
 IT 108-77-0, Cyanuric chloride 118-12-7, 1,3,3-Trimethyl-2-methyleneindoline 556-18-3, 4-Aminobenzaldehyde 24866-73-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of cationic dyes with improved water solubility)
 IT 161882-58-2P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (cationic dyes with improved water solubility)
 RN 161882-58-2 HCAPLUS
 CN 1H-Benzimidazolium, 2,2'-[[[6-[bis[2-(acetyloxy)ethyl]amino]-1,3,5-triazine-2,4-diyl]bis[imino-4,1-phenylene(1-cyano-2,1-ethenediyl)]]bis[1,3-dimethyl-, dichloride (9CI) (CA INDEX NAME)

PAGE 1-A



●2 Cl-

PAGE 1-B



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L21 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
 AN 1993:214875 HCAPLUS
 DN 118:214875
 ED Entered STN: 29 May 1993
 TI Styryl dyes containing an aza-15-crown-5 macroheterocycle moiety
 AU Mateeva, N.; Deligeorgiev, T.; Mitewa, M.; Simova, S.
 CS Fac. Chem., Univ. Sofia, Sofia, 1126, Bulg.
 SO Dyes and Pigments (1993), Volume Date 1992, 20(4), 271-8
 CODEN: DYPIDX; ISSN: 0143-7208
 DT Journal
 LA English
 CC 41-6 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
 AB Seven styryl dyes containing an aza-15-crown-5 moiety were synthesized and characterized by means of elemental anal., m.p., and UV, IR, and ¹H-NMR spectra. The color change in the presence of metal salts was investigated.
 ST styryl dye crown ether; chromoionophore styryl crown ether
 IT Dyes, cyanine
 (styryl aza crown ethers, preparation of, as chromoionophores)
 IT Ionophores
 (chromo-, styryl dye aza crown ethers, preparation of)
 IT Crown compounds
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (ether imines, styryl dyes, preparation of, as chromoionophores)
 IT 489-84-9, Guaiazulene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (Vilsmeier reaction of, with formylphenylaza crown ether)
 IT 66749-96-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (Vilsmeier reaction of, with guaiazulene)
 IT 144753-85-5P 146963-86-2P 146963-88-4P 146963-90-8P
 146963-92-0P 147370-29-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as chromoionophore)
 IT 333-20-0, Potassium thiocyanate 540-72-7, Sodium thiocyanate
 2092-17-3, Barium thiocyanate 7790-69-4, Lithium nitrate 10124-37-5.

Calcium nitrate 10377-60-3. Magnesium nitrate

RL: USES (Uses)

(styryl dye aza crown ether absorption spectra in acetonitrile solns.
of)

IT 146963-88-4P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, as chromoionophore)

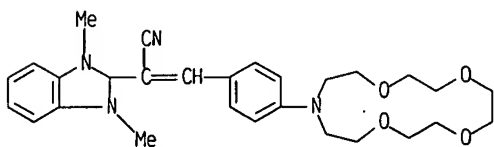
RN 146963-88-4 HCAPLUS

CN 1H-Benzimidazolium, 2-[1-cyano-2-[4-(1,4,7,10-tetraoxa-13-azacyclopentadec-
13-yl)phenyl]ethenyl]-1,3-dimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 146963-87-3

CMF C28 H35 N4 O4

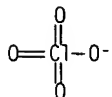


ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 14797-73-0

CMF C1 O4



L21 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1977:56725 HCAPLUS

DN 86:56725

ED Entered STN: 12 May 1984

TI Vinylene homologs of styryl dyes with substituents in the polymethine chain

AU Koval'chuk, R. E.; Il'chenko, A. Ya.

CS Inst. Org. Khim., Kiev, USSR

SO Ukrainskii Khimicheskii Zhurnal (Russian Edition) (1976).

42(11), 1174-8

CODEN: UKZHAU; ISSN: 0041-6045

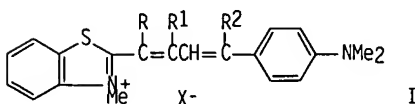
DT Journal

LA Russian

CC 40-7 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

Section cross-reference(s): 28

GI



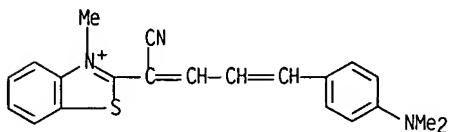
- AB The absorption maximum of 10 title compds. (I; R = H, F, CN, COCF₃; R₁ = H, Cl; R₂ = H, Cl, NMe₂) were determined and the substituent effects discussed. The λ_{max} in MeNO₂ ranged from 478 nm for I (R = CN, R₁ = H, R₂ = NMe₂) [61503-17-1] to 660 nm for I (R = CN, R₁ = H, R₂ = Cl) [61503-15-9]. All the I showed neg. solvatochromism, the λ_{max} of I (R-R₂ = H) [61503-13-7] being 572 nm in MeNO₂ and 612 nm in CHCl₃. I (R₁ = H) were prepared by condensation of 2-RCH₂-substituted 3-methylbenzothiazolium salts with p-Me₂NC₆H₄CR₂:CHCHO.
- ST vinylene homolog styryl dye; substituent effect cyanine spectra; solvatochromism styryl dye homolog; benzothiazole deriv electronic spectra
- IT Dyes, cyanine
 ([[dimethylamino]phenyl]butadienyl)methylbenzothiazolium compds.
 preparation and optical absorption of)
- IT Solvatochromism
 (of [[dimethylamino]phenyl]butadienyl)methylbenzothiazolium compds.)
- IT Molecular structure-property relationship
 (spectra, visible, of [[dimethylamino]phenyl]butadienyl)methylbenzothiazolium compds.)
- IT 36874-53-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (chlorination of)
- IT 7089-35-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (hydrolysis of)
- IT 61502-92-9P 61502-94-1P 61502-96-3P 61502-98-5P
 61503-00-2P 61503-02-4P 61503-04-6P 61503-13-7P 61503-15-9P
 61503-17-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and optical absorption of)
- IT 61503-10-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and quaternization of)
- IT 61503-12-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction with (dimethylamino)benzaldehyde)
- IT 61503-07-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction with benzothiazolium salts)
- IT 61503-08-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
- IT 100-10-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with (chloropropenyl)methylbenzothiazolium Me sulfate)
- IT 57716-36-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with (dimethylamino)cinnamaldehyde)
- IT 6203-18-5 61503-06-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with benzothiazolium salts)
- IT 2038-15-5 57716-32-2 61503-05-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with cinnamaldehyde derivs.)
- IT 61503-09-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with sodium methoxide)
- IT 61502-94-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and optical absorption of)
- RN 61502-94-1 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-4-[4-(dimethylamino)phenyl]-1,3-butadienyl]-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 61502-93-0

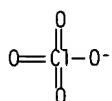
CMF C21 H20 N3 S



CM 2

CRN 14797-73-0

CMF C1 O4



L21 ANSWER 9 OF 23 HCAPLUS: COPYRIGHT 2005 ACS on STN

AN 1976:569617 HCAPLUS

DN 85:169617

ED Entered STN: 12 May 1984

TI Direct-positive silver halide emulsions

AU Anon.

CS UK

SO Research Disclosure (1976), 144, 32-5 (No. 14438)

CODEN: RSDSBB; ISSN: 0374-4353

DT Journal: Patent

LA English

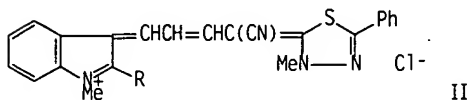
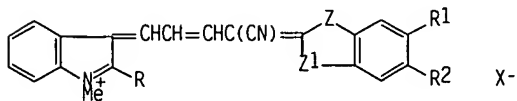
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic Processes)

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 144038		19760410		
RD 1976-144038		19760410		

PI RD 144038 19760410

PRAI RD 1976-144038 19760410

GI



AB Indole dyes I (R = Ph, p-ClC6H4; R1 = H, Cl; R2 = H, Cl; Z = S, NMe, NEt; Z1 = NMe, NEt, CMe2; X- = Cl-, I-, ClO4-) and II (R = Ph, p-ClC6H4) are described, which are particularly suitable for spectrally sensitizing direct-pos. Ag halide emulsions containing fogged Ag halide grains to the red

region of the spectrum. Thus, I (R = p-ClC₆H₄; R₁, R₂ = H; Z = S; Z₁ = NMe), which was prepared by refluxing 1-methyl-2-(4-chlorophenyl)-3-(2-formylvinyl)indole and 2-cyanomethylene-3-methyl-2,3-dihydrobenzothiazole, 85 mg was added along with Pinakryptol Yellow (III) 87.5 mg to a reduction- and Au-fogged, monodispersed, cubic direct-pos. photog. Ag(Br.I) emulsion (2.5 mole % I-), the emulsion coated on a subbed support, dried, and exposed to give a relative speed of 3200 and a sensitivity maximum at 670-80 nm vs. a relative speed of 100 for a control containing only III.

ST indole dye photog spectral sensitizer; emulsion direct pos photog sensitization

IT Photographic sensitizers

(indole dyes as, for direct-pos. emulsions)

IT 60834-89-1 60834-90-4 60834-91-5

60834-93-7 60834-94-8 60834-95-9 60871-55-8

61037-85-2

RL: TEM (Technical or engineered material use); USES (Uses)

(photog. spectral sensitizer, for direct-pos. emulsions)

IT 60834-96-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with cyanomethylenemethyl-2,3-dihydrobenzothiazole)

IT 60834-97-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with heterocyclic compds.)

IT 52735-84-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with methyl(chlorophenyl)-(formylvinyl)indole)

IT 5114-82-9 60834-98-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with methylphenyl(formylvinyl)indole)

IT 60834-89-1 60834-90-4 60834-91-5

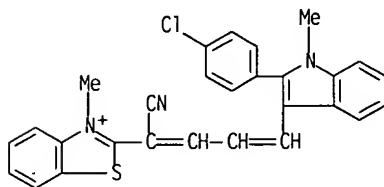
60834-93-7 60871-55-8 61037-85-2

RL: TEM (Technical or engineered material use); USES (Uses)

(photog. spectral sensitizer, for direct-pos. emulsions)

RN 60834-89-1 HCAPLUS

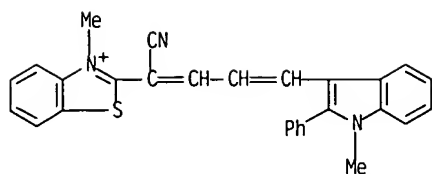
CN Benzothiazolium, 2-[4-[2-(4-chlorophenyl)-1-methyl-1H-indol-3-yl]-1-cyano-1,3-butadienyl]-3-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl-

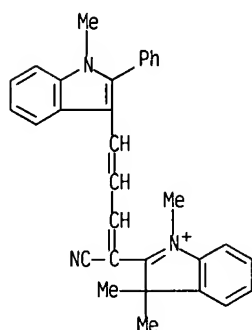
RN 60834-90-4 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-4-(1-methyl-2-phenyl-1H-indol-3-yl)-1,3-butadienyl]-3-methyl-, chloride (9CI) (CA INDEX NAME)

● Cl⁻

RN 60834-91-5 HCAPLUS

CN 3H-Indolium, 2-[1-cyano-4-(1-methyl-2-phenyl-1H-indol-3-yl)-1,3-butadienyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)

● I⁻

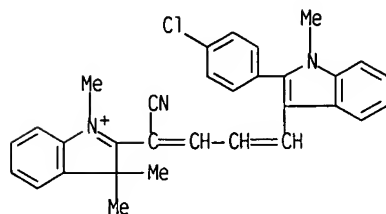
RN 60834-93-7 HCAPLUS

CN 3H-Indolium, 2-[4-[2-(4-chlorophenyl)-1-methyl-1H-indol-3-yl]-1-cyano-1,3-butadienyl]-1,3,3-trimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 60834-92-6

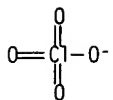
CMF C31 H27 Cl N3



CM 2

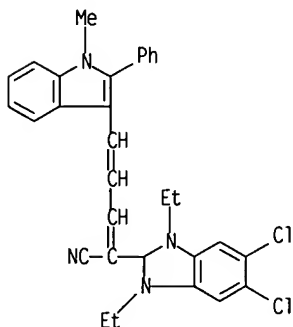
CRN 14797-73-0

CMF Cl O4



RN 60871-55-8 HCAPLUS

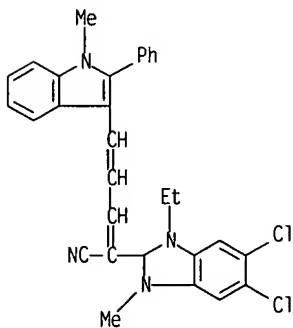
CN 1H-Benzimidazolium, 5,6-dichloro-2-[1-cyano-4-(1-methyl-2-phenyl-1H-indol-3-yl)-1,3-butadienyl]-1,3-diethyl-, iodide (9CI) (CA INDEX NAME)

● I⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 61037-85-2 HCAPLUS

CN 1H-Benzimidazolium, 5,6-dichloro-2-[1-cyano-4-(1-methyl-2-phenyl-1H-indol-3-yl)-1,3-butadienyl]-3-ethyl-1-methyl-, iodide (9CI) (CA INDEX NAME)

● I⁻

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L21 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1976:19153 HCAPLUS

DN 84:19153

ED Entered STN: 12 May 1984

TI Fluorine-containing cyanine dyes. XXXV. Effect on the absorption spectrum of dyes-styryls of substituents in the polymethine chain

AU Il'chenko, A. Ya.; Koval'chuk, R. E.; Yagupol'skii, L. M.

CS Inst. Org. Khim., Kiev, USSR

SO Zhurnal Organicheskoi Khimii (1975). 11(10). 2163-7
 CODEN: ZORKAE; ISSN: 0514-7492

DT Journal

LA Russian

CC 40-2 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)

GI For diagram(s), see printed CA Issue.

AB The net shift in the λ_{max} of I (R = H, CN, CF₃, COCF₃; R₁ = H, CF₃; X = Cl, ClO₄⁻) due to R shows contributions from both the meso-substituent effect as in carbocyanines and its effect on the electron-donating capacity of the benzothiazole nucleus. Both electron-donating and electron-withdrawing R cause a hypsochromic shift from the maximum of I (R = R₁ = H). Introduction of CF₃ as R₁ causes a slight net bathochromic shift. I (R₁ = H) were prepared by condensation of the appropriate 2-(RCH₂)-substituted benzothiazolium salts with 4-Me₂NC₆H₄CHO [100-10-7] in Ac₂O or without solvent under vacuum.

ST fluorine contg styryl dye: substituent effect styryl spectra; benzothiazolium salt styryl spectra; aminostyrylbenzothiazolium salt spectra

IT Dyes
 ([[dimethylamino]styryl]methylbenzothiazolium salts, substituent effects on visible spectra of)

IT Ultraviolet and visible spectra
 (of [[dimethylamino]styryl]methylbenzothiazolium salts, substituent effects on)

IT 42905-57-7P 57716-27-5P 57716-30-0P 57716-31-1P
 57716-34-4P 57716-37-7P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation and absorption spectra of)

IT 84-83-3 122-51-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with (cyanomethyl)methylbenzothiazolium chloride)

IT 57716-28-6 57716-32-2 57716-36-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with (dimethylamino)benzaldehyde)

IT 2038-15-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with (dimethylamino)trifluoroacetophenone)

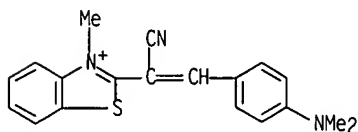
IT 100-10-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with benzothiazolium salts)

IT 2396-05-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dimethylbenzothiazolium Me sulfate)

IT 57716-31-1P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation and absorption spectra of)

RN 57716-31-1 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-3-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

DN 81:31848
 ED Entered STN: 12 May 1984
 TI Sensitized electrophotographic layers
 IN Oehlschlaeger, Hans; Riester, Oskar; Ghys, Theofiel H.; Verhille, Karel
 E.; Vanheertum, Johannes J.
 PA Agfa-Gevaert A.-G.
 SO Ger. Offen., 22 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC G03G
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2214055	A1	19730927	DE 1972-2214055	19720323 <--
	BE 796792	A2	19730917	BE 1973-1004896	19730315 <--
	US 3881926	A	19750506	US 1973-342872	19730319 <--
	GB 1401133	A	19750723	GB 1973-13277	19730320 <--
	CA 984651	A1	19760302	CA 1973-166696	19730321 <--
	IT 979930	A	19740930	IT 1973-48929	19730322 <--
	CH 582368	A	19761130	CH 1973-4191	19730322 <--
	FR 2177095	A1	19731102	FR 1973-10544	19730323 <--
	JP 49008237	A2	19740124	JP 1973-32818	19730323 <--
PRAI	DE 1972-2214055	A	19720323	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2214055	IC	G03G

GI For diagram(s), see printed CA Issue.
 AB Cyanine dyes (I, II, III; R = NO₂, acyl; R₁, R₂ = aryl, saturated or unsatd. aliphatic; R₃ = H, aryl, saturated or unsatd. aliphatic; R₄ = SR₇, NR₈R₉ where R₇, R₈, R₉ = aliphatic or R₈R₉ together completing a 5- or 6-member heterocyclic ring; n, p = 0, 1; M = 0-3 interger; X- = anion; Z₁, Z₂ = atom groups for completing a 5- or 6-member heterocyclic ring.) are used as spectral sensitizers for zinc oxide and organic photoconductors in electrophotog. Thus, 0.1 g IV as 0.1% solution in DMF was added to a photoconductive composition prepared from ZnO 20, acrylic copolymer 4.5 g, PhMe 20, EtOAc 11 and 10% tetrachlorophthalic anhydride in EtOH 0.66 ml., coated on a baryta paper (25 g ZnO/m²), charged, exposed to an incandescent lamp (2280 lx) through a stepwedge for 15 sec to give 25 steps with a maximum sensitivity at 555 nm. as compared to only 14 steps for IV-free control.

ST cyanine sensitizer electrophotog

IT Photographic sensitizers

(electro-, cyanine dyes as)

IT 42905-55-5 42905-56-6 42905-57-7 42905-58-8 42905-61-3
 42905-69-1 42905-72-6 42905-84-0 42905-86-2
 42905-95-3 43138-17-6 53035-24-8 53035-26-0 53035-28-2
 53035-30-6 53035-32-8 53035-34-0 53035-36-2
 53035-38-4 53092-12-9 53092-14-1 53100-80-4

RL: USES (Uses)

(electrophotog. sensitizer)

IT 42905-72-6 42905-84-0 53035-30-6
 53035-32-8 53092-12-9 53092-14-1

RL: USES (Uses)

(electrophotog. sensitizer)

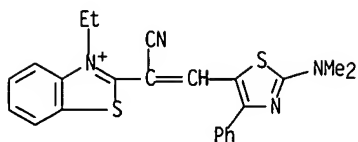
RN 42905-72-6 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-2-[2-(dimethylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 48221-76-7

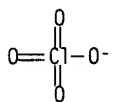
CMF C23 H21 N4 S2



CM 2

CRN 14797-73-0

CMF C1 04



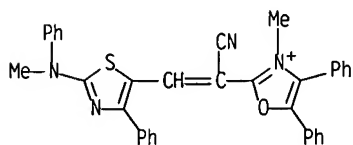
RN 42905-84-0 HCAPLUS

CN Oxazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-4,5-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 48237-95-2

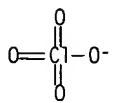
CMF C35 H27 N4 O S



CM 2

CRN 14797-73-0

CMF C1 04



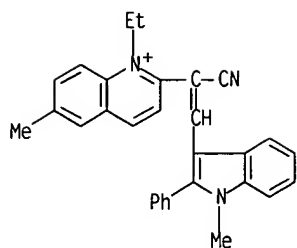
RN 53035-30-6 HCAPLUS

CN Quinolinium, 2-[1-cyano-2-(1-methyl-2-phenyl-1H-indol-3-yl)ethenyl]-1-ethyl-6-methyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 53035-29-3

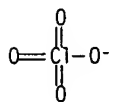
CMF C30 H26 N3



CM 2

CRN 14797-73-0

CMF C1 04



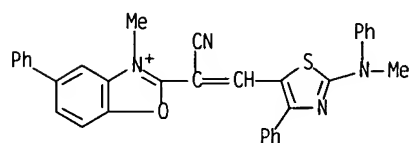
RN 53035-32-8 HCAPLUS

CN Benzoxazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-5-phenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 53035-31-7

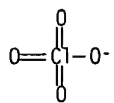
CMF C33 H25 N4 O S



CM 2

CRN 14797-73-0

CMF C1 04



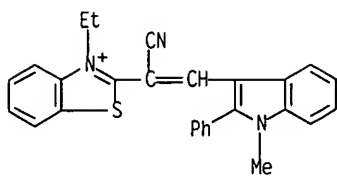
RN 53092-12-9 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-2-(1-methyl-2-phenyl-1H-indol-3-yl)ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 53092-11-8

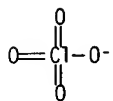
CMF C27 H22 N3 S



CM 2

CRN 14797-73-0

CMF C1 04



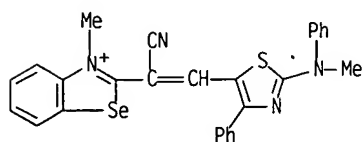
RN 53092-14-1 HCAPLUS

CN Benzoselenazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 53092-13-0

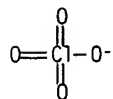
CMF C27 H21 N4 S Se



CM 2

CRN 14797-73-0

CMF C1 04



L21 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1973:499215 HCAPLUS

DN 79:99215

ED Entered STN: 12 May 1984

TI Positive colored images by bleach process

IN Riester, Oskar; Oehlschlaeger, Hans

PA Agfa-Gevaert A.-G.

SO Ger. Offen., 23 pp.

CODEN: GWXXBX

DT Patent

LA German

IC G03C

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2165915	A1	19730712	DE 1971-2165915	19711231 <--
	BE 792436	A2	19730608	BE 1972-1004649	19721208 <--
	GB 1370060	A	19741009	GB 1972-59982	19721229 <--
PRAI	DE 1971-2165915	A	19711231	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2165915	IC	G03C

GI For diagram(s), see printed CA Issue.

AB Pos. colored images were obtained by an Ag-free photobleaching process with copying materials containing NaBPh₄ and a cationic methine dye, e.g. I or II. Thus, a paper support was coated with 100 ml of aqueous composition containing 0.05 g I in 5 ml MeOH, 20 ml 10% aqueous gelatin, 0.5 g NaBPh₄ in 10 ml H₂O and 39 ml 10% aqueous gelatin, 10 ml 10% methanolic poly(vinylpyrrolidinone), and 1.5 ml 7.5% aqueous saponin and dried. The paper was irradiated 2 min at 10 cm with a 500-W lamp to give an orange pos. image on a white background.

ST color photog photobleaching process; boranate color photog photobleaching; phenylboranate color photog photobleaching; methine dye color photog

IT Photographic emulsions
(silver-free, for bleach process containing methine dyes and sodium tetraphenylborate)

IT 143-66-8

RL: USES (Uses)

(color silver-free photog. materials containing methine dyes and)

IT 42905-69-1 50379-06-1 50722-78-6

RL: USES (Uses)

(color silver-free photog. materials containing sodium tetraphenylborate and)

IT 42905-91-9P 50379-09-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 50379-10-7

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (anilidovinyl)dimethyloxypyrimidinium perchlorate)

IT 1757-72-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (cyanomethylene)methylbenzoselenazole)

IT 50379-13-0

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (cyanomethylene)methylphenylbenzoxazole)

IT 32623-27-1

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (cyanomethylene)methylthiazoline)

IT 50379-11-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (methylphenylamino)phenylthiazolecarboxaldehyde)

IT 50379-12-9

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with formylmethylphenylindole)

IT 50379-06-1

RL: USES (Uses)

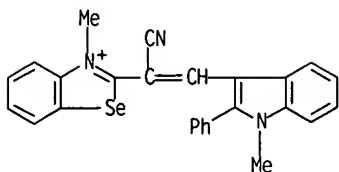
(color silver-free photog. materials containing sodium tetraphenylborate and)

RN 50379-06-1 HCAPLUS

CN Benzoselenazolium, 2-[1-cyano-2-(1-methyl-2-phenyl-1H-indol-3-yl)ethenyl]-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

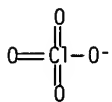
CM 1

CRN 50575-34-3
CMF C26 H20 N3 Se



CM 2

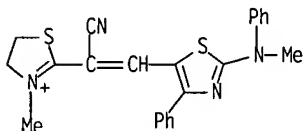
CRN 14797-73-0
CMF C1 O4



IT 50379-09-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 50379-09-4 HCAPLUS
CN Thiazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-4,5-dihydro-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

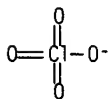
CM 1

CRN 50575-27-4
CMF C23 H21 N4 S2



CM 2

CRN 14797-73-0
CMF C1 O4



L21 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1973:425684 HCAPLUS
DN 79:25684
ED Entered STN: 12 May 1984

TI Polymethine sensitizers for direct-positive emulsions
 IN Riester, Oskar; Oehlschlaeger, Hans; Odenwaelder, Heinrich
 PA Agfa-Gevaert A.-G.
 SO Ger. Offen., 28 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC G03C
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2142967	A1	19730308	DE 1971-2142967	19710827 <--
	BE 787442	A2	19730212	BE 1972-1004289	19720811 <--
	US 3846137	A	19741105	US 1972-282968	19720823 <--
	GB 1392127	A	19750430	GB 1972-39408	19720824 <--
	FR 2150884	A1	19730413	FR 1972-30441	19720825 <--
	CH 566572	A	19750915	CH 1972-12610	19720825 <--
	CA 995052	A1	19760817	CA 1972-150158	19720825 <--
	JP 48032528	A2	19730428	JP 1972-85464	19720828 <--
PRAI	DE 1971-2142967	A	19710827	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2142967	IC	G03C

GI For diagram(s), see printed CA Issue.

AB Previously described polymethine dyes from heterocyclic base constituents of cyanine dyes with a CN, NO₂, or acyl group at a lateral CH group of the polymethine chain, 20-70 mg/kg, are particularly suitable for direct pos. emulsions because their sensitizing curve is steep and they leave little strain. The sensitizing maxs. of 51 examples vary between 515 and 655 nm. Thus, 2-(cyanomethylene)-3-ethylbenzothiazole 1.0 g and 4-(acetanilidovinyl)-1,3-dimethyl-2-pyrimidone perchlorate 1.7 g were refluxed in Ac2O 10 ml for 10 min to yield I, a typical dye with a sensitizing maximum at 580 nm.

ST direct pos photog sensitizer; methine dye sensitizer photog

IT Photographic sensitizers
 (polymethine dyes containing cyano and nitro groups as. for direct-pos. emulsions)

IT	21648-40-8	42905-55-5	42905-56-6	42905-57-7	42905-58-8
	42905-59-9	42905-60-2	42905-61-3	42905-62-4	42905-63-5
	42905-64-6	42905-65-7	42905-66-8	42905-67-9	42905-68-0
	42905-69-1	42905-70-4	42905-71-5	42905-72-6	42905-73-7
	42905-74-8	42905-75-9	42905-76-0	42905-77-1	42905-78-2
	42905-79-3	42905-80-6	42905-81-7	42905-82-8	
	42905-83-9	42905-84-0	42905-85-1	42905-86-2	
	42905-87-3	42905-88-4	42905-89-5	42905-90-8	42905-91-9
	42905-92-0	42905-93-1	42905-94-2	42905-95-3	42905-96-4
	42905-97-5	42905-98-6	42905-99-7	42906-00-3	43004-13-3
	43138-17-6	49715-94-8	50795-72-7		

RL: TEM (Technical or engineered material use); USES (Uses)
 (photog. sensitizer, for direct-pos. emulsions)

IT 42905-72-6 42905-77-1 42905-80-6
 42905-82-8 42905-83-9 42905-84-0

RL: TEM (Technical or engineered material use); USES (Uses)
 (photog. sensitizer, for direct-pos. emulsions)

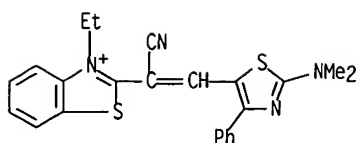
RN 42905-72-6 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-2-[2-(dimethylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 48221-76-7

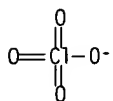
CMF C23 H21 N4 S2



CM 2

CRN 14797-73-0

CMF C1 04



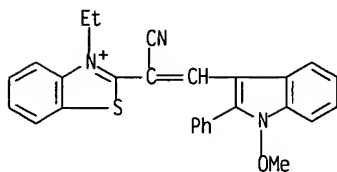
RN 42905-77-1 HCAPLUS

CN Benzo[1,2-b:4,5-b']dithiazolium, 2-[1-cyano-2-(1-methoxy-2-phenyl-1H-indol-3-yl)ethenyl]-3-ethenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 48227-17-4

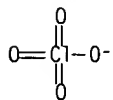
CMF C27 H22 N3 O S



CM 2

CRN 14797-73-0

CMF C1 04



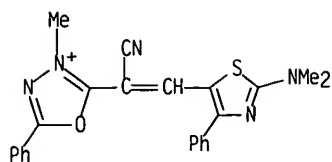
RN 42905-80-6 HCAPLUS

CN 1,3,4-Oxadiazolium, 2-[1-cyano-2-[2-(dimethylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-5-phenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 48224-20-0

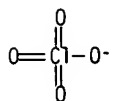
CMF C23 H20 N5 O S



CM 2

CRN 14797-73-0

CMF C1 04



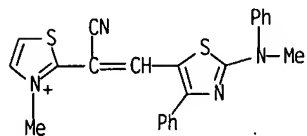
RN 42905-82-8 HCAPLUS

CN Thiazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 48222-05-5

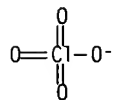
CMF C23 H19 N4 S2



CM 2

CRN 14797-73-0

CMF C1 04



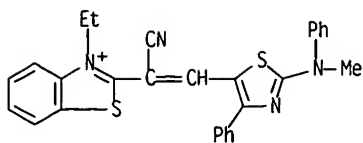
RN 42905-83-9 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 48230-49-5

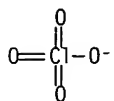
CMF C28 H23 N4 S2



CM 2

CRN 14797-73-0

CMF C1 04



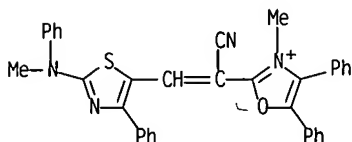
RN 42905-84-0 HCAPLUS

CN Oxazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-4,5-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 48237-95-2

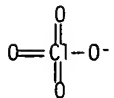
CMF C35 H27 N4 O S



CM 2

CRN 14797-73-0

CMF C1 04



L21 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1967:105907 HCAPLUS

DN 66:105907

ED Entered STN: 12 May 1984

TI Sensitizing dyes

IN Knott, Edward B.

PA Kodak-Pathe

SO Fr., 15 pp.

CODEN: FRXXAK

DT Patent

LA French

IC C09B; G03C

CC 40 (Dyes, Fluorescent Brightening Agents, and Photosensitizers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 1449800		19660819		<--
	GB 1119661			GB	
	GB 1120360			GB	
	US 3395017		19680000	US	<--
	US 3598813		19710000	US	<--
PRAI US			19640702	<--	

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

FR 1449800 IC C09BIC G03C

GI For diagram(s), see printed CA Issue.

AB Compds. of the general formulas I-VI are sensitizers for photographic emulsions, pH indicators, and wool dyes. A mixture of 1.2 g. 2-HO₂CC₆H₄COCH₂Br, 1.4 g. 3-ethoxycarbonylmethyl-5-ethoxymethylenetherhodanine, and 10 ml. EtOH was heated to solution on a steam bath, 1.3 ml. Et₃N was added, the mixture boiled under reflux for 5 min., and the purple solution treated with concentrated HCl until it turned yellow, giving 1.6 g. (82%) VII (X = CO₂, Y = S, R = CH₂CO₂Et) (VIII), yellow crystalline powder, m. 280.degree. (shrinking and decomposition from 260.degree.), a moderate sensitizer for AgCl-AgBr emulsion with maximum at 585 and 625 nm. Similarly, other VII were prepared (compound number, X, Y, R, % yield, appearance, m.p., and sensitization maximum in nm. given): IX, CO₂, S, Et, 73, brilliant yellow crystals) 270.degree. (decompose), -; X, O₂C, S, CH₂CO₂Et, 72, fine orange needles, 261.degree. (EtOH), 530-90; XI, CO, S, Et, 79, maroon plates, - (soften approx. 165.degree.), 460-560; XII, CO₂, O, Et, 33, flat rust needles, 250-60.degree. (decomposition), - (prepared from 3-ethoxymethyleneisochroman-1,4-dione, soft pale yellow needles, m. 152-3.degree.). Condensing 4-HOC₆H₄CHO with 3-allylrhodanine gave 86% XIII (X = OH, Y = H, R = CH₂CH:CH₂) (XIV), soft orange needles, m. 167-9.degree. (C₆H₆-petroleum ether). Similarly was prepared XIII (X = H, Y = OH, R = Et) (XV), yellow orange needles, m. 190.degree., and XVI (compound number R, % yield, appearance, m.p., and sensitization maximum in nm. given): XVII, CN, 88, brown crystals, m. 126.degree. (softens from 75.degree.) (EtOH), 510 (yellow orange on wool); XVIII, CO₂Et, 50, pale yellow crystals, 128-30.degree. (AcOH), 510-70; XIX, 4-O₂NC₆H₄, 86, soft green crystals, shrinks at 208-10.degree. (EtOH-Et₂O), -(navy blue on wool). IX (3.33 g.) dissolved in a solution of 0.23 g. Na in 25 ml. MeOH, treated with 1.5 ml. MeI, the mixture boiled under reflux for 2 hrs., filtered and washed with alc. Et₃N gave 79% IX.MeI, deep maroon crystals, soften from 180.degree., m. 268.degree. (effervescence). Similarly, other methiodides were prepared (% yield, appearance, and m.p. given): VIII.MeI, 60, green bronze threads, 212-14.degree.; XI.MeI, 84.5, brilliant red-orange needles (alc. HCONMe₂), soften 245.degree., m. 251-2.degree.; XIX.MeI, 97, steel gray crystalline powder, 268.degree. (decomposition) (HCONMe₂). A mixture of 1 g. VIII and 1 ml. Me₂SO₄ heated at 170.degree. in an oil bath for 5 min. gave a red tar which was pressed against the test-tube walls with a glass rod, Et₂O being added repeatedly until the Et₂O remained colorless. The quaternization mixture was treated with 0.8 g. 3-ethyl-2-methylbenzothiazolium iodide (XX), 5 ml. pyridine, and 0.8 ml. Et₃N, heated on a steam-bath for 5 min. with stirring to dissolve, treated with 25 ml. EtOH, cooled, filtered, and washed with EtOH to give 0.4 g. (29%) I (X = CO₂, Z = S) (XXI), bronze threads, m. 261-2.degree.. A solution of XXI in AcOH treated with concentrated HCl gave XXI.HCl, maroon crystals, m. 250-4.degree.. Similarly, other I were prepared (X, Z, % yield, appearance, m.p., and sensitization maximum in nm. given): CO₂, CH:CH, 33, green platelets, 190.degree. (soften 186.degree.) (alc. C₅H₅N), -, [isomer from 1,4-dimethylquinolinium tosylate 26.5% yield, bronze, crystalline powder, m. 276.degree. (alc. HCONMe₂)]; CO₂, O, 13, green coppery needles, 275.degree. (decompose), 670; O₂C, S, 35, deep red crystals (alc. C₅H₅N), -.

520 and 570; O2C, O, 30, pink needles (1:4 C5H5N-EtOH), 279-83.degree.. -; CO, S, 91.5%, maroon threads (alc. HCONMe2), -, 590. Similarly, XIV, Me2SO4, and XX gave 31% green crystals, m. 275.degree. (shrink 260-70.degree.), sensitization maximum 560 nm.; XV, Me2SO4, and XX gave 64% bronze threads (or green crystals), m. 278-9.degree. (alc. HCONMe2), maximum 570-610 nm. Similarly were prepared II (X, Y, Z, R, R', n, % yield, appearance, m.p., and sensitization maximum in nm. given): CO2, S, H, CH2CO2Et, CH2CO2Et, O, 34, maroon platelets, 238.degree. (decompose 235.degree.), 630-90; O2C, S, H, CH2CO2Et, CH2CO2Et, O, 51, orange threads, 283.degree. (prior softening), 590-680; O2C, S, H, CH2CO2Et, Et, O, 43, red orange needles, 301-2.degree., 530-50; CO2, S, H, CH2CO2Et, Et, O, 86, rust platelets, 255.degree., 625-8.degree.; CO, S, H, Et, Et, O, 100, black crystalline powder, -(indefinite), 630-80; CO2, S, H, CH2CO2Et, CH2CO2Et, 1, 12.5, green threads, 240.degree., 690-720; CO2, S, SEt, Et, CH2CO2Et, 1, 40, brilliant green crystals, 270-80.degree. (decomposition), -; O2C, S, OEt, CH2CO2Et, CH2CO2Et, 1, 62.5, maroon crystals, 242.degree. (prior softening), 630-710; CO2, S, OEt, CH2CO2Et, CH2CO2Et, 1, 25, maroon threads, 250.degree., 750-90; CO2, O, H, Et, Et, O, -, orange powder, -(soften 250.degree.). Similarly were prepared III (X = O2C, Y = S, R = CH2CO2Et, Z = H, n = 0), 11% yield, black bronze powder, m. 276.degree., maximum 560-610.degree. nm. IV (X = CO, Y = S, R = Et, Z = H, n = 0), 96% yield, green crystals, m. 271-2.degree. (alc. C5H5N), V (X = OH, Y = H, R = R' = CH2CH:CH2), 28.5% yield, brick red threads, m. 252-3.degree., maximum 530-65 nm.; V (X = H, Y = OH, R = R' = Et), 10% yield, reddish crystalline powder, m. 230.degree., maximum 525 nm.; VI (R = CN), 46% yield, maroon threads, m. 196-8.degree., maximum 580 nm.; VI (R = CO2Et), 32% yield, pale green aggregates, shrink 167.degree., maximum 590-660 nm.; and VI (R = 4-O2NC6H4), 90.5% yield, dark green needles, m. 234.degree..

ST PHOTOG SENSITIZERS; SENSITIZERS PHOTOG; BENZOTHAZOLE PHOTOG SENSITIZERS; BENZOXAZOLE PHOTOG SENSITIZERS; ISOCHROMAN PHOTOG SENSITIZERS; CHROMAN PHOTOG SENSITIZERS

IT Photographic sensitizers

(trinuclear, 4-hydroxycoumarin, 4-hydroxyisocoumarin or 3-hydroxy-1-indanone derivs.)

IT Isocoumarin, 4-hydroxy-, derivs.

RL: USES (Uses)

(as trinuclear methinecyanine dyes)

IT 1076-38-6D, Coumarin, 4-hydroxy-, derivs.

RL: USES (Uses)

(as trinuclear methinecyanine dyes)

IT 3730-24-3P 3730-25-4P 3730-26-5P 3730-27-6P 3730-30-1P
3730-32-3P 3730-35-6P 3730-38-9P 3730-39-0P 3730-40-3P
3730-41-4P 3730-42-5P 3730-44-7P 3730-45-8P 3730-46-9P
3730-47-0P 3730-49-2P 3730-51-6P 3777-44-4P 3777-46-6P
3777-48-8P 3777-49-9P 3777-50-2P 3777-51-3P 3783-20-8P
3783-22-0P 3866-57-7P 14955-08-9P 14955-09-0P 14969-07-4P
14969-08-5P 14969-18-7P 14969-19-8P 14969-23-4P 14969-26-7P
14969-27-8P 15080-78-1P 15715-10-3P 15979-36-9P 15979-37-0P

RL: IMF (Industrial manufacture); PREP (Preparation)

(preparation of)

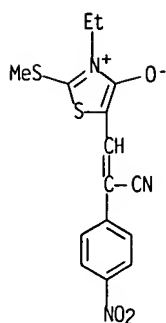
IT 3730-30-1P

RL: IMF (Industrial manufacture); PREP (Preparation)

(preparation of)

RN 3730-30-1 HCAPLUS

CN Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt (8CI) (CA INDEX NAME)



L21 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1965:472618 HCAPLUS

DN 63:72618

OREF 63:13451g-h,13452a

ED Entered STN: 22 Apr 2001

TI Complex oxonols and holopolar merocyanines

AU Knott, E. B.

CS Kodak Ltd., Wealdstone, UK

SO J. Chem. Soc., Suppl. (1964) 6204-16

DT Journal

LA English

CC 46 (Dyes)

GI For diagram(s), see printed CA Issue.

AB Oxonols derived from 3-substituted 2-thio-4-thiazolidinones and -4-oxazolidinones, yield reactive holopolar betaines (I) on treatment with Me2SO4 or MeI-NaOEt. The betaines condense with reactive methylene compounds to give complex oxonols (II) and with nucleophilic Me groups of cyclic quaternary ammonium salts to give a new type of dye (III), a holopolar merocyanine which is a hybrid of an oxonol anion and a cyanine cation. Higher vinylogs of these dyes have been obtained and the reaction has been extended to acid dyes containing only one O atom in the resonance system.

IT Dyes

(merocyanine, holopolar, 2-thiazolinium derivs. and related compds.)

IT [.DELTA.2,5'-Bithiazolidine]-3,3'-diacetic acid, 5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4,4'-dioxo-2'-thioxo-, diethyl ester

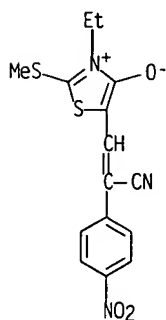
IT 4-Thiazoline-5-acrylonitrile, 3-ethyl-4-hydroxy-.alpha.-(p-nitrophenyl)-2-thioxo- (sodium derivative)

IT 4-Thiazoline-3-acetic acid, 4-hydroxy-5-(2-nitro-1-butenyl)-2-thioxo-, ethyl ester (O-Na derivative)

IT 3730-23-2, 3-Thiazolidineacetic acid, 5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2,4-dioxo-, ethyl ester 3730-30-1, Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt 3730-32-3, [.DELTA.2,5'-Bithiazolidine]-3,3'-diacetic acid, 5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4,4'-dioxo-2'-thioxo-, diethyl ester 3730-34-5, [.DELTA.2,5'-Bithiazolidine]-3,3'-diacetic acid, 5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4,4'-dioxo-2'-thioxo-, diethyl ester, compound with triethylamine (1:1) 3730-36-7, 3-Thiazolidineacetic acid, 2-(3-ethyl-4-oxo-2-thioxo-5-oxazolidinylidene)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-37-8, 3-Thiazolidineacetic acid, 2-(3-ethyl-4-oxo-2-thioxo-5-oxazolidinylidene)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-43-6, [.DELTA.2,5'-Bithiazolidine]-3,3'-diacetic acid, 5-[3-[3-(carboxymethyl)-4-hydroxy-2-thioxo-4-thiazolin-5-yl]-3-ethoxy-1-methylallylidene]-4,4'-dioxo-2'-thioxo-, triethyl ester 3730-44-7, 3-Thiazolidineacetic acid,

5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2'-thioxo-2,5'-ethanediyldienebis[4-oxo-, diethyl ester 3730-46-9, 3-Thiazolidineacetic acid, 2-[2-[3-(carboxymethyl)-4-oxo-2-thioxo-5-thiazolidinylidene]-2-ethoxyethylidene]-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, diethyl ester 3730-50-5, 3-Thiazolidineacetic acid, 2-(dicyanomethylene)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3783-27-5, Malononitrile, [(3-ethyl-4-hydroxy-2-thioxo-4-thiazolin-5-yl)methylene]- 3783-28-6, 4-Thiazoline-5-acrylic acid, .alpha.-cyano-3-ethyl-4-hydroxy-2-thioxo-, ethyl ester 3866-57-7, 3-Thiazolidineacetic acid, 2-[2-[3-(carboxymethyl)-4-oxo-2-thioxo-5-thiazolidinylidene]-2-ethoxyethylidene]-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-, diethyl ester 97118-77-9, Thiazolinium, 3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt 97299-82-6, Thiazolinium, 3-ethyl-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt 98341-80-1, Thiazolinium, 3-(carboxymethyl)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, Et ester 98364-53-5, Thiazolinium, 3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, Et ester (preparation of)

- IT 673432-87-6, 4-Thiazoline-2-thione, 3-ethyl-4-hydroxy-5-(2-nitropropenyl)-(O-sodium derivative)
 IT 3730-30-1, Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt (preparation of)
 RN 3730-30-1 HCAPLUS
 CN Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt (8CI) (CA INDEX NAME)



L21 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1965:472617 HCAPLUS

DN 63:72617

OREF 63:13451c-g

ED Entered STN: 22 Apr 2001

TI Cyanine dyes with two conjugated chromophores. II

AU Kiprianov, A. I.; Mushkalo, I. L.

CS Inst. Org. Chem., Kiev

SO Zhurnal Obshchei Khimii (1965), 1(4), 750-5

CODEN: ZOKHAA; ISSN: 0044-460X

DT Journal

LA Russian

CC 46 (Dyes)

GI For diagram(s), see printed CA Issue.

AB It was shown that in biscyanine dyes with 2 conjugated polymethine chromophores containing quinoline, benzothiazole, or rhodanine nuclei, the same rules apply to displacement of absorption bands as indicated in the previous abstract 2-(Methylthio)lepidine.Me2S04 (I) and 2-

methylbenzothiazole. Me₂SO₄ heated in EtOH-Et₃N 0.5 h. gave 47% 1'.4'.3-trimethylthia-2'-cyanine Me sulfate (II), m. 265.degree.. Simultaneous addition of Et₃N-EtOH and I in EtOH to a boiling solution of quinaldine methosulfate in EtOH and heating 10 min. gave, after evaporation, 57% 1.1'.4'-trimethyl-2.2'-cyanine Me sulfate m. 1805.degree.. which with 1-methyl-2-(formylmethylene)-1.2-dihydroquinoline in pyridine-Ac₂O gave 2.7% 1-methyl-2-[(1'-methyl-2'-quinolylidene)methyl]-4-[(1''-methyl-2''-quinolylidene)propenyl]quinolinium perchlorate, decomposed 270.degree.. II and 2-(formylmethylene)-3-methylbenzothiazoline similarly gave 29% 1-methyl-2-[(3'-benzothiazolinyldene)methyl]-4-[(3''-methyl-2''-benzothiazolinyldene)propenyl]quinolinium Me sulfate, decomposed 300.degree.. Similarly was prepared 9.4% 1-methyl-2-[(3'methyl-2'-benzothiazolinyldene)methyl]-4-[(1''-methyl-2''-quinolyldene)propenyl]quinolinium iodide, decomposed 320.degree.. 2-[(3'-Phenyl-4'-oxothiazolin-2'-ylidene)methyl]-3-ethylbenzothiazolium iodide heated 4 h. with Me₂CO in AcOH-AcONa gave 40% 2-[(3'-phenyl-4'-oxo-5'-isopropylidene-2'-thiazolidinyldene)methyl]-3-ethylbenzothiazolium iodide, decomposed 2523.degree.; it readily added EtOH at its double bond and its spectrum was altered thereby. 3-Phenyl-5-[(3'-ethylbenzothiazolin-2'-ylidene)ethylidene]rhodanine, decomposed 285.degree.. heated with Me₂SO₄ at 130.degree.. then treated with 2-methylbenzothiazole.Et tosylate in EtOH-Et₃N gave 25% 3-ethyl-2-[(3'-phenyl-4'-oxo-5'-[(3''-ethyl-2''-benzothiazolinyldene)ethylidene]-2'-thiazolidinyldene)methyl]benzothiazolium iodide, decomposed 265.degree.. Spectra of the dyes were reported.

IT Dyes

(bis(cyanine), benzothiazolium, quinolinium and rhodanine derivs.)

IT Visible spectra

Visible spectra

(of bis(cyanine) dyes)

IT 4-Thiazoline-5-acrylonitrile, 3-ethyl-4-hydroxy-.alpha.-(p-nitrophenyl)-2-thioxo-, sodium derivative

Benzothiazolium, 2-[3-[2-[3-(2-benzothiazolyl)allylidene]-3-ethyl-6-benzothiazoliny]-4-methyl-4-thiazolin-2-ylidene]propenyl]-3-ethyl-, perchlorate, methoperchlorate

Benzothiazolium, 2-[[3-[2-(2-benzothiazolyl)methylene]-3-methyl-6-benzothiazolyl]-4-methyl-4-thiazolin-2-ylidene]methyl]-3-methyl-, perchlorate, methoperchlorate

Benzoxazolium, 2-[3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinyldene]methyl]-3-ethyl-, hydroxide, inner salt, Et ester

Benzoxazolium, 2-[3-(carboxymethyl)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinyldene]methyl]-3-ethyl-, hydroxide, inner salt, Et ester

Thiazolinium, 3-(carboxymethyl)-5-[3-[3-(carboxymethyl)-4-hydroxy-2-thioxo-4-thiazolin-5-yl]-3-ethoxy-1-methylallylidene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, di-Et ester

IT Benzothiazolium, 2-[3-[3-[2-[3-(2-benzothiazolyl)allylidene]-3-ethyl-6-benzothiazoliny]-4-methyl-4-thiazolin-2-ylidene]propenyl]-3-ethyl-, perchlorate, ethoperchlorate
(reactive, dibenzenesulfonamide-containing and their metal complexes, cotton)

IT 977-96-8, Quinolinium, 1-ethyl-2-[(1-ethyl-4(1H)-quinolyldene)methyl]-, iodide 3730-23-2, 3-Thiazolidineacetic acid, 5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2.4-dioxo-, ethyl ester 3730-28-7, Isocoumarin, 3-[(3-ethyl-2.4-dioxo-5-thiazolinyldene)methyl]-4-hydroxy-3730-30-1, Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt 3730-34-5, Triethylamine, compound with di-Et 5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4.4'-dioxo-2'-thioxo[.DELTA.2.5'-bithiazolidine]-3,3'-diacetate (1:1) 3730-35-6, Rhodanine, 3-ethyl-5-[3-ethyl-5-[3-hydroxy-1-oxoinden-2-yl)methylene]-4-oxo-2-thiazolidinyldene]- 3730-36-7, 3-Thiazolidineacetic acid, 2-(3-ethyl-4-oxo-2-thioxo-5-oxazolidinyldene)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-37-8, 3-Thiazolidineacetic acid, 2-(3-ethyl-4-oxo-2-thioxo-5-

oxazolidinylidene)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-38-9, Isocoumarin, 3-[[3-ethyl-2-(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)-4-oxo-5-oxazolidinylidene]methyl]-4-hydroxy-3730-39-0, 3-Thiazolidineacetic acid, 2-[2-(ethylthio)-5-oxo-2-thiazolin-4-ylidene]-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-40-3, 4-Thiazolidinone, 2-[2-(diphenylamino)-4-oxo-2-thiazolin-5-ylidene]-3-ethyl-5-[(3-hydroxy-1-oxo-inden-2-yl)methylene]-3730-41-4, 4-Thiazoline-5-acrylic acid, .alpha.-cyano-3-ethyl-2-(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)-4-hydroxy-, ethyl ester 3730-42-5, 4-Thiazoline-5-acrylonitrile, 3-ethyl-2-(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)-4-hydroxy-.alpha.-(p-nitrophenyl)- 3730-45-8, 3-Thiazolidineacetic acid, 5-[2-[3-ethyl-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]-1-(ethylthio)ethylidene]-4-oxo-2-thioxo-, ethyl ester 3730-46-9, 3-Thiazolidineacetic acid, 2-[2-[3-(carboxymethyl)-4-oxo-2-thioxo-5-thiazolidinylidene]-2-ethoxyethylidene]-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, diethyl ester 3730-47-0, Benzothiazolium, 2-[[3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt, Et ester 3730-50-5, 3-Thiazolidineacetic acid, 2-(dicyanomethylene)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-51-6, Rhodanine, 3-allyl-5-[3-allyl-5-(p-hydroxybenzylidene)-4-oxo-2-thiazolidinylidene]- 3730-52-7, Rhodanine, 3-ethyl-5-[3-ethyl-5-[(2-hydroxy-4-phenyl-5-thiazolyl)methylene]-4-oxo-2-thiazolidinylidene]- 3757-71-9, Quinolinium, 1-methyl-2-[(3-methyl-2-benzothiazolinyliidene)methyl]-4-[3-(3-methyl-2-benzothiazolinyliidene)propenyl]-, methyl sulfate 3757-72-0, Quinolinium, 1-methyl-2-[(3-methyl-2-benzothiazolinyliidene)methyl]-4-[3-(1-methyl-2(1H)-quinolyliidene)propenyl]-, iodide 3777-44-4, Benzothiazolium, 2-[[3-allyl-5-(p-hydroxybenzylidene)-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt 3777-45-5, Benzothiazolium, 3-ethyl-2-[[3-ethyl-5-[(2-hydroxy-4-phenyl-5-thiazolyl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-, hydroxide, inner salt 3777-46-6, Benzothiazolium, 2-[[5-(2,2-dicyanovinyl)-3-ethyl-4-hydroxy-4-thiazolin-2-ylidene]methyl]-3-ethyl-, hydroxide, inner salt 3777-47-7, Benzothiazolium, 2-[[3-(carboxymethyl)-5-[3-[3-(carboxymethyl)-4-hydroxy-2-thioxo-4-thiazolin-5-yl]-3-ethoxy-1-methylallylidene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt, di-Et ester 3777-49-9, Benzothiazolium, 2-[[3-(carboxymethyl)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt, Et ester 3777-51-3, Benzothiazolium, 3-ethyl-2-[[3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-, hydroxide, inner salt 3783-10-6, Sodium, [[3-(carboxymethyl)-5-(2-nitro-1-butenyl)-2-thioxo-4-thiazolin-4-yl]oxy]-, ethyl ester 3783-12-8, Quinolinium, 1,4-dimethyl-2-[(1-methyl-2(1H)-quinolyliidene)methyl]-, methyl sulfate 3783-13-9, Benzothiazolium, 3-ethyl-2-[(5-isopropylidene-4-oxo-3-phenyl-2-thiazolidinylidene)methyl]-, iodide 3783-14-0, Rhodanine, 5-[2-(3-ethyl-2-benzothiazolinyliidene)ethylidene]-3-phenyl- 3783-15-1, Benzothiazolium, 3-ethyl-2-[[5-[2-(3-ethyl-2-benzothiazolinyliidene)ethylidene]-4-oxo-3-phenyl-2-thiazolidinylidene]methyl]-, iodide 3783-16-2, Sodium, [[3-ethyl-5-(2-nitropropenyl)-2-thioxo-4-thiazolin-4-yl]oxy]- 3783-17-3, Quinolinium, 1,4-dimethyl-2-[(1-methyl-2(1H)-quinolyliidene)methyl]-, iodide 3783-18-4, Quinolinium, 1-ethyl-2,4-bis[(1-ethyl-2(1H)-quinolyliidene)methyl]-, iodide 3783-20-8, Rhodanine, 3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]- 3783-22-0, Rhodanine, 3-allyl-5-(p-hydroxybenzylidene)- 3783-23-1, Rhodanine, 3-ethyl-5-[(4-hydroxy-1-naphthyl)methylene]- 3783-24-2, Rhodanine, 3-ethyl-5-[(2-hydroxy-4-phenyl-5-thiazolyl)methylene]- 3783-25-3, Rhodanine, 3-ethyl-5-[(2-hydroxy-4-methyl-5-thiazolyl)methylene]- 3783-26-4, Rhodanine, 3-ethyl-5-[(2-mercapto-4-methyl-5-thiazolyl)methylene]- 3783-27-5, Malononitrile, [(3-ethyl-4-hydroxy-2-thioxo-4-thiazolin-5-yl)methylene]- 3783-28-6, 4-Thiazoline-5-acrylic acid, .alpha.-cyano-3-ethyl-4-hydroxy-2-thioxo-, ethyl ester 3783-29-7,

Rhodanine, 3-ethyl-5-[3-(3-ethyl-4-hydroxy-2-thioxo-4-thiazolin-5-yl)-2-nitroallylidene]-, compound with triethylamine (1:1) 3808-45-5, Rhodanine, 3-ethyl-5-[2-[3-[3-ethyl-2-[2-(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)ethylidene]-6-benzothiazoliny]-4-methyl-4-thiazolin-2-ylidene]ethylidene]- 3808-46-6, Quinolinium, 1,4-dimethyl-2-[(3-methyl-2-benzothiazolinyldiene)methyl]-, methyl sulfate 3808-56-8, Quinolinium, 1-ethyl-2,4-bis[(1-ethyl-2-benzothiazolinyldiene)methyl]-, iodide 3840-98-0, Quinolinium, 1-methyl-2-[(1-methyl-2(1H)-quinolyldiene)methyl]-4-[3-(1-methyl-2(1H)-quinolyldiene)propenyl]-, perchlorate 3866-57-7, 3-Thiazolidineacetic acid, 2-[2-[3-(carboxymethyl)-4-oxo-2-thioxo-5-thiazolidinylidene]-2-ethoxyethylidene]-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-, diethyl ester 5169-32-4, 3-Thiazolidineacetic acid, 5,5'-(1-ethoxy-3-methyl-1-propen-1-yl-3-ylidene)bis[4-oxo-2-thioxo-, diethyl ester 14969-19-8, Benzothiazolium, 2-[[3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, chloride, Et ester 92906-04-2, Sodium, [[5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-2-thioxo-4-thiazolin-4-yl]oxy]- 97118-77-9, Thiazolinium, 3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt 97299-82-6, Thiazolinium, 3-ethyl-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt 98341-80-1, Thiazolinium, 3-(carboxymethyl)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, Et ester 98364-53-5, Thiazolinium, 3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, Et ester 100436-86-0, 3-Thiazolidineacetic acid, 5,5'-(1-ethoxy-3-methyl-1-propen-1-yl-3-ylidene)bis[4-oxo-2-thioxo-, diethyl ester, sodium derivative 103006-16-2, Quinolinium, 4-[[3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-1-methyl-, hydroxide, inner salt, Et ester

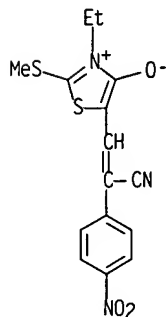
(preparation of)

IT 3730-30-1, Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt

(preparation of)

RN 3730-30-1 HCAPLUS

CN Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt (8CI) (CA INDEX NAME)



L21 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1961:58344 HCAPLUS

DN 55:58344

OREF 55:11152b-h

ED Entered STN: 22 Apr 2001

TI Cyanine dyes

IN Coenen, Max; Weissel, Oskar

PA Farbenfabriken Bayer Akt.-Ges.

DT Patent

LA Unavailable

NCL 22E

CC 5 (Photography)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 1073662		19600121	DE	<--
	GB 897197			GB	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 1073662	NCL 22E	

GI For diagram(s), see printed CA Issue.

AB Cyanine dyes are described having the general formula I, where $n = 0$ or 1 , $R = H$, alkyl, or alkoxy, $R' = H$, CN, or another substituent, X represents a double alkylated C, and N a singly alkylated N atom. The I are valuable sensitizers for photographic Ag halide emulsions. 1,3,3-Trimethyl-2-methyleneindoline- ω -aldehyde (II) (5.0 g.), 5.0 g. 1,1,3-trimethyl-2-cyanomethyleneindoline (III), and 30 cc. C₆H₆ treated for 2 min. with 3.0 g. SOCl₂ gave 9.0 g. 2-(1,3,3-trimethylindole)-2'-(1,3,3-trimethylindole)- α -cyanotrimethinecyanine chloride (IV), crystals with a metallic luster, orange in MeOH. The 5-MeO derivative (22.8 g.) of III and 20.1 g. II in 40 cc. CHCl₃ treated at 65.degree. during 15 min. with 15.3 g. POCl₃, refluxed 15 min., and evaporated yielded 44.5 g. of the 2-(1,3,3-trimethyl-5-methoxyindole) analog of IV, bluish red in MeOH. The 5-Me derivative (10.6 g.) (V) of III, 10.8 g. 5-Me derivative of II, 20 cc. CHCl₃, and 7.5 g. POCl₃ yielded similarly 18.3 g. of the 5,5'-di-Me derivative of IV, scarlet-red in MeOH. 1,3,3-Trimethyl-2-(α ... γ -dicyanopropenylidene)indoline (5.0 g.), 4.0 g. II, and 3.0 g. POCl₃ in 25 cc. CHCl₃ refluxed 20 min. and evaporated, and the residue dissolved in 150 cc. MeOH and repptd. with NH₄ClO₄ gave 7.5 g. α ... γ -dicyanopentamethinecyanine perchlorate analog of IV, blue crystals, violet in MeOH. V (10.6 g.) and 10.1 g. II in 20 cc. CHCl₃ treated in 5 min. with 7.6 g. POCl₃ yielded 21.5 g. of the 2-(1,3,3,5-tetramethylindole) analog of IV, brown powder, red-orange in MeOH. The 5-Cl derivative (11.7 g.) of III and 10.1 g. II in 20 cc. CHCl₃ with 7.6 g. POCl₃ gave 23.2 g. of the 2-(1,3,3-trimethyl-5-chloroindole) analog of IV, brown powder, orange in MeOH. III (5.0 g.), 6.0 g. 1-methyl-2-phenyl-3-indolecarboxaldehyde, 10 cc. CHCl₃, and 3.0 g. SOCl₂ refluxed 10 min. and evaporated and the residue dissolved in 100 cc. MeOH and repptd. with NH₄ClO₄ gave 12.5 g. 2-(1,3,3-trimethylindole)-3'-(1-methyl-2-phenylindole)- α -cyanodimethinecyanine perchlorate, brown powder, orange in MeOH. III (5.0 g.), 3.7 g. p-Me₂NC₆H₄CHO, 10 cc. CHCl₃, and 3.0 g. POCl₃ refluxed 5 min. and evaporated, and the residue repptd. from MeOH with NH₄ClO₄ gave 6.8 g. 2-(4-dimethylamino- β -cyanostyryl)-1,3,3-trimethylindolinium perchlorate, violet-red in MeOH.

IT Photography

(sensitizers (super-), carbocyanine dyes and merocyaninedyes as)

IT Photography

(sensitizers, cyanine dyes as)

IT 3H-Indolium compounds, 2-(1-cyano-p-diethylaminostyryl)-1,3,3-trimethyl-, perchlorate

3H-Indolium compounds, 2-[1-cyano-2-(1-methyl-2-phenylindol-3-yl)vinyl]-1,3,3-trimethyl-, perchlorate

3H-Indolium compounds, 2-[3,5-dicyano-5-(1,3,3-trimethyl-2-indolinyldiene)-1,3-pentadienyl]-1,3,3-trimethyl-, perchlorate

3H-Indolium compounds, 2-[3-(5-chloro-1,3,3-trimethyl-2-indolinyldiene)-3-cyanopropenyl]-1,3,3-trimethyl-, chloride

3H-Indolium compounds, 2-[3-cyano-3-(1,3,3,5-tetramethyl-2-indolinyldiene)propenyl]-1,3,3,5-tetramethyl-, chloride

3H-Indolium compounds, 2-[3-cyano-3-(1,3,3,5-tetramethyl-2-indolinyldiene)propenyl]-1,3,3-trimethyl-, chloride

3H-Indolium compounds, 2-[3-cyano-3-(1,3,3-trimethyl-2-indolinyldiene)propenyl]-1,3,3-trimethyl-, chloride

3H-Indolium compounds, 2-[3-cyano-3-(5-methoxy-1,3,3-trimethyl-2-

indolinylidene)propenyl]-1,3,3-trimethyl-, chloride
 Dimethinecyanine perchlorate, 2-(1,3,3-trimethylindole)-3'-(1'-methyl-2'-phenylindole)-.alpha.-cyano-
 Pentamethinecyanine perchlorate, 2-(1,3,3-trimethylindole)-2'-(1',3',3'-trimethylindole)-.alpha..gamma.-dicyano-
 Trimethinecyanine chloride, 2-(1,3,3,5-tetramethylindole)-2'-(1',3',3'.5'-tetramethylindole)-.alpha.-cyano-
 Trimethinecyanine chloride, 2-(1,3,3,5-tetramethylindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
 Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-chloroindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
 Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-methoxyindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
 Trimethinecyanine chloride, 2-(1,3,3-trimethylindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
 IT 99071-73-5, Rhodanine, 3-ethyl-5-(4(1H)-pyridylidene)-
 (derivs., as photographic supersensitizers)

L21 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1961:58343 HCAPLUS

DN 55:58343

OREF 55:11152b

ED Entered STN: 22 Apr 2001

TI Infrakrasnaya fotografiya (Infrared Photography)

AU Solov'ev, S. M.

SO (1960) Publisher: (Iskusstvo, Moscow), 215 pp.

DT Book

LA Unavailable

CC 5 (Photography)

AB Unavailable

IT Photography
 (books, Infrared)

L21 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1961:58342 HCAPLUS

DN 55:58342

OREF 55:11152a-b

ED Entered STN: 22 Apr 2001

TI Laboratornaya obrabotka fotomaterialov (Laboratory Processing of Photographic Materials)

AU Katsenelenbrogen, E. D.; Iofis, E. A.; et al.

SO (1959) Publisher: (Iskusstvo, Moscow), 206 pp.

DT Book

LA Unavailable

CC 5 (Photography)

AB Unavailable

IT Photography
 (books, Laboratory Processing of Photographic Materials)

L21 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1961:53064 HCAPLUS

DN 55:53064

OREF 55:10164e-i,10165a-d

ED Entered STN: 22 Apr 2001

TI Methine dyes

IN Kendall, John D.; Waddington, Henry R. J.; Duffin, Geo. F.

PA Ilford Ltd.

DT Patent

LA Unavailable

CC 5 (Photography)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
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PI GB 856068		19601214	GB		<--

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

GB 856068

AB The preparation of methine and polymethine photosensitizing dyes is described. The intermediate 7-diethylaminocoumarin-4-acetic acid (I), m. 159-60.degree. (decompose), was prepared as follows: A mixture of Et acetonedicarboxylate 42, freshly fused anhydrous ZnCl₂ 36, and m-diethylaminophenol 36 g., in EtOH 120 ml. was refluxed 17 hrs., poured into 500 ml. H₂O plus 2 ml. 2N HCl, and the oil was separated and washed with H₂O. The oil was dissolved in 500 ml. Et₂O, washed successively with 1N NaOH and H₂O, dried over Na₂SO₄, and the Et₂O was evaporated. The product was dissolved in EtOAc, and addition of petr. ether precipitated 1 Et ester, m. 80-2.degree.. This was heated 15 min. with 2N Na₂CO₃ and alc., cooled, H₂O was added, and the solution was filtered. Addition of 2N HCl to max precipitation gave crude product, which was recrystd. from 50% aqueous alc. to give I. 7-Methylcoumarin-4-acetic acid (II), m. 204-6.degree. (decompose), was prepared from m-cresol, citric acid, and H₂SO₄, and 7-methoxycoumarin-4-acetic acid (III), m. 200.degree. (decompose), was prepared from resorcinol mono-Me ether, citric acid, and H₂SO₄. 7-Hydroxy-4-[(3-methyl-2-benzothiazolinyldene)methyl]coumarin, m. 313-14.degree. (EtOH), was prepared by refluxing 7-hydroxycoumarin-4-acetic acid 0.88 g., 2-methylthiobenzothiazole-MeI (IV) 1.3 g., pyridine 10 ml., and Et₃N 2 ml. for 1 hr. and precipitating with H₂O. Other dyes were similarly prepared from the following reagents (m.p., spectral limit, and spectral maximum in A. given): 7-methyl-4-[(3-methyl-2-benzothiazolinyldene)methyl]coumarin, 237-9.degree., 5200, 4400, from II and IV; 7-methyl-4-[3-(3-ethyl-2-benzothiazolinyldene)propenyl]coumarin, 235-7.degree., 6400, 5200-5800, from II and 2-(2-acetylanilinovinyl)benzothiazole-EtI (V); 7-diethylamino-4-[3-(3-ethyl-2-benzothiazolinyldene)propenyl]coumarin, 234-6.degree., 6300, 5000-5800.degree., from I and V; 7-methoxy-4-[3-(3-ethyl-2-benzothiazolinyldene)propenyl]coumarin, 203-5.degree., 6300, 5000-5800, from III and V; 7-methyl-4-[3-(3-ethyl-2-benzoxazolinyldene)propenyl]coumarin, 228-30.degree., 6000, 4200, from II and 2-(2-acetylanilinovinyl)benzoxazole-EtI (VI); 7-diethylamino-4-[3-(3-ethyl-2-benzoxazolinyldene)propenyl]coumarin, 190-2.degree., 6000, 5400, from I and VI; 7-methoxy-4-[3-(3-ethyl-2-benzoxazolinyldene)propenyl]coumarin, 189-91.degree., 6000, 4200-5400, from III and VI; 7-methyl-4-[3-(1,3,3-trimethylindoleninyldene)propenyl]coumarin, 195-7.degree., 5600, 5400, from II and 2-(2-ethylthiovinyl)-1,3,3-trimethylindoleninium metho-p-toluenesulfonate (VII); 7-diethylamino-4-[3-(1,3,3-trimethylindoleninyldene)propenyl]coumarin, 203-5.degree., 5600, 5400 from I and VII; 7-methyl-4-[3-(5-methylthio-3-methyl-1,3,4-thiadiazolin-2-ylidene)-propenyl]coumarin, 215.degree. (decompose), -, -, from II and 2-(2-acetylanilinovinyl)-5-methylthio-3-methyl-1,3,4-thiadiazolium iodide; 7-methyl-4-[3-(4,4-dimethyl-1-ethyl-2-pyrrolidinyldene)propenyl]coumarin, 178.degree., -, -, from II and 2-(2-acetylanilinovinyl)-4,4-dimethyl-1-ethyl-1-pyrrolinium iodide; 7-methyl-4-[3-(5,6-dimethyl-3-ethyl-2-benzoxazolinyldene)propenyl]coumarin, 237.degree., -, -, from II and 2-(2-acetylanilinovinyl)-5,6-dimethyl-3-ethylbenzoxazolium iodide; 7-methyl-4-[3-(5-chloro-3-ethyl-2-benzothiazolinyldene)propenyl]coumarin, 262.degree., -, -, from II and 2-(2-acetylanilinovinyl)-5-chloro-3-ethylbenzothiazolium iodide; 5,6-benzo-4-[3-(3-ethyl-2-benzoxazolinyldene)propenyl]coumarin, 190.degree., -, -, from 5,6-benzocoumarin-4-acetic acid and 2-(2-acetylanilinovinyl)-3-ethylbenzoxazolium iodide; 6,7-dimethyl-4-[3-(3-ethyl-2-benzoxazolinyldene)propenyl]coumarin, 245.degree., -, -, from 6,7-dimethylcoumarin-4-acetic acid and 2-(2-acetylanilinovinyl)-3-ethylbenzoxazolium iodide; 7-methyl-4-[3-(6-methoxy-3-ethylbenzoxazolinyldene)propenyl]coumarin, 222.degree., -, -, from II and 2-(2-acetylanilinovinyl)-6-methoxy-3-ethylbenzoxazolium iodide; 4-[3-(3-ethyl-2-benzothiazolinyldene)propenyl]coumarin, 235.degree., -, -, from coumarin-4-acetic acid and 2-(2-acetylanilinovinyl)-3-ethylbenzothiazolium iodide; and 7-methyl-4-[3-(3-methyl-2-

thiazolidinylidene)propenyl] coumarin, 192.degree., -, -, from II and 2-(2-acetylanilino vinyl)-2-methyl-2-thiazoline p-toluenesulfonate.

IT Photography
(sensitizers, methine and polymethine dyes as)

IT 1-Naphthaleneacrylic acid, .beta.-[3-(3-ethyl-2-benzoxazoliny lidene)propenyl]-2-hydroxy-, .delta.-lactone

IT 4712-45-2, .DELTA.2-1,3,4-Thiadiazoline
(derivs., as cyanine dyes)

IT 50402-83-0, 2H-1-Benzopyran-4-acetic acid, 7-methyl-2-oxo- 62935-72-2, 2H-1-Benzopyran-4-acetic acid, 7-methoxy-2-oxo- 88590-30-1, Umbelliferone, 4-(3-methyl-2-benzothiazoliny lidene)methyl)- 94301-09-4, Coumarin, 7-methyl-4-(3-methyl-2-benzothiazoliny lidene)methyl)- 100956-47-6, 2H-1-Benzopyran-4-acetic acid, 7-diethylamino-2-oxo- 101582-94-9, 2H-1-Benzopyran-4-acetic acid, 7-diethylamino-2-oxo-, ethyl ester 102469-40-9, Coumarin, 4-[3-(3-ethyl-2-benzothiazoliny lidene)propenyl]- 102469-41-0, Coumarin, 7-methyl-4-[3-(3-methyl-2-benzothiazoliny lidene)propenyl]- 102549-19-9, Coumarin, 4-[3-(3-ethyl-2-benzothiazoliny lidene)propenyl]-7-methyl- 102549-25-7, Coumarin, 4-[3-(3-ethyl-2-benzoxazoliny lidene)propenyl]-8-methyl- 102592-69-8, Coumarin, 4-[3-(3-ethyl-2-benzoxazoliny lidene)propenyl]-5,6-dimethyl- 102592-76-7, Coumarin, 4-[3-(3-ethyl-6-methoxy-2-benzoxazoliny lidene)propenyl]-7-methyl- 102597-15-9, Coumarin, 4-[3-(1-ethyl-4,4-dimethyl-2-pyrrolidinylidene)propenyl]-7-methyl- 102703-97-9, Coumarin, 4-[3-(5-chloro-3-ethyl-2-benzothiazoliny lidene)propenyl]-7-methyl- 102951-01-9, Coumarin, 7-methyl-4-[3-(1,3,3-trimethyl-2-indoliny lidene)propenyl]- 102951-95-1, Coumarin, 7-diethylamino-4-[3-(3-ethyl-2-benzothiazoliny lidene)propenyl]- 102951-96-2, Coumarin, 7-diethylamino-4-[3-(3-ethyl-2-benzoxazoliny lidene)propenyl]- 103033-51-8, Coumarin, 7-diethylamino-4-[3-(1,3,3-trimethyl-2-indoliny lidene)propenyl]- 114224-55-4, Coumarin, 7-methyl-4-[3-[4-methyl-2-(methylthio)-.DELTA.2-1,3,4-thiadiazolin-5-ylidene]propenyl]- 114280-08-9, Coumarin, 4-[3-(3-ethyl-5,6-dimethyl-2-benzoxazoliny lidene)propenyl]-7-methyl- 115020-13-8, Herniarin, 4-[3-(3-ethyl-2-benzoxazoliny lidene)propenyl]- 115120-73-5, Herniarin, 4-[3-(3-ethyl-2-benzothiazoliny lidene)propenyl]- 124291-10-7, .DELTA.2,.epsilon.-Benzoxazolinesorbic acid, 3-ethyl-.beta.-(2-hydroxy-1-naphthyl)-, .delta.-lactone
(preparation of)

L21 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1961:53063 HCAPLUS

DN 55:53063

OREF 55:10164a-e

ED Entered STN: 22 Apr 2001

TI Cyanine dyes

IN Coenen, Max; Weissel, Oskar

PA Farbenfabriken Bayer Akt.-Ges.

DT Patent

LA Unavailable

NCL 22E

CC 5 (Photography)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 1070316		19591203	DE	<--
	GB 897195			GB	
	US 3090782		1963	US	<--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 1070316	NCL 22E	

GI For diagram(s), see printed CA Issue.

AB Cyanine dyes are repd. from aldehydes of the general formula I, where R is

hydrogen, alkyl, choline, alkoxy, or another organic radical, R' is H, CN, or group usual in cyanines, X is dialkylated C, Y an alkylated N atom, and n is 0 or 1, by condensing with methylene group-containing bases or quaternary cyclammonium salts in presence of acids and inert solvents. Thus, [2-(1,3,3-trimethyl-5-methoxyindole)] [2-(1,3,3-trimethyl-5-methoxyindole)]-.alpha.-cyanotrimethinecyanine chloride is prepared by treating 1,3,3-trimethyl-5-methoxy-2-cyanomethyleneindoline-.omega.-aldehyde (II) 12.8 and 1,3,3-trimethyl-5-methoxy-2-methyleneindoline (III) 10.2 with POCl₃ 7.5 g. in 20 ml. CHCl₃ to give 19.2 g. greenish crystals, bluish red in H₂O. Similar dyes are prepared (reagents, color, and solvent given): 1,3,3,5-tetramethyl-2-cyanomethylindoline-.omega.-aldehyde, 1,3,3,5-tetramethyl-2-methyleneindoline, POCl₃, scarlet, H₂O; II, 1,3,3-trimethyl-2-methyleneindoline (IV), POCl₃, bluish red, H₂O; 1,3,3-trimethyl-5-chloro-2-cyanomethyleneindoline-.omega.-aldehyde, 1,3,3-trimethyl-5-chloro-2-methyleneindoline, POCl₃, scarlet, H₂O; 1,3,3-trimethyl-2-cyanomethyleneindoline-.omega.-aldehyde (V), 1,3,3-trimethyl-5-chloro-2-cyanomethyleneindoline, SOCl₂ red-orange H₂O; II, 1,3,3,5-tetramethyl-2-cyanomethyleneindoline, SOCl₂ bluish red, H₂O; bluish red; 1,3,3-trimethyl-2-(1,3-dicyanopropenylidene)indoline-.omega.-aldehyde, IV, POCl₃, violet, MeOH; II, 1,2-dimethylbenzothiazolium methosulfate, Et₃N, HOAc, bluish red MeOH; V, 1-methyl-2-phenylindole, POCl₃ orange red, MeOH, and V, 2-methylindole, POCl₃, orange red, MeOH.

IT Dyes

(cyanine)

IT Photography

(cyanine dyes for)

- IT 3H-Indolium compounds, 2-[1,3-dicyano-3-(5-methoxy-1,3,3-trimethyl-2-indolinyldene)propenyl]-1,3,3,5-tetramethyl-, chloride
 3H-Indolium compounds, 2-[1-cyano-2-(1-methyl-2-phenylindol-3-yl)vinyl]-1,3,3-trimethyl-, perchlorate
 3H-Indolium compounds, 2-[1-cyano-2-(2-methylindol-3-yl)vinyl]-1,3,3-trimethyl-, chloride
 3H-Indolium compounds, 2-[3,5-dicyano-5-(1,3,3-trimethyl-2-indolinyldene)-1,3-pentadienyl]-1,3,3-trimethyl-, perchlorate
 3H-Indolium compounds, 2-[3-(5-chloro-1,3,3-trimethyl-2-indolinyldene)-1,3-dicyanopropenyl]-1,3,3-trimethyl-, chloride
 3H-Indolium compounds, 2-[3-cyano-3-(1,3,3,5-tetramethyl-2-indolinyldene)propenyl]-1,3,3,5-tetramethyl-, chloride
 3H-Indolium compounds, 2-[3-cyano-3-(5-methoxy-1,3,3-trimethyl-2-indolinyldene)propenyl]-1,3,3-trimethyl-, chloride
 3H-Indolium compounds, 2-[3-cyano-3-(5-methoxy-1,3,3-trimethyl-2-indolinyldene)propenyl]-5-methoxy-1,3,3-trimethyl-, chloride
 3H-Indolium compounds, 5-chloro-2-[3-(5-chloro-1,3,3-trimethyl-2-indolinyldene)-3-cyanopropenyl]-1,3,3-trimethyl-, chloride
 Benzothiazolium compounds, 2-[3-cyano-3-(5-methoxy-1,3,3-trimethyl-2-indolinyldene)propenyl]-3-methyl-, methyl sulfate
 Dimethinecyanine chloride, 2-(1,3,3-trimethylindole)-3'-(2'-methylindole)-.alpha.-cyano-
 Dimethinecyanine perchlorate, 2-(1,3,3-trimethylindole)-3'-(1'-methyl-2'-phenylindole)-.alpha.-cyano-
 Pentamethinecyanine perchlorate, 2-(1,3,3-trimethylindole)-2'-(1',3',3'-trimethylindole)-.alpha.-.gamma.-dicyano-
 Trimethinecyanine chloride, 2-(1,3,3,5-tetramethylindole)-2'-(1',3',3',5'-tetramethylindole)-.alpha.-cyano-
 Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-chloroindole)-2'-(1',3',3'-trimethyl-5'-chloroindole)-.alpha.-cyano-
 Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-chloroindole)-2'-(1',3',3'-trimethylindole)-.alpha.-.gamma.-dicyano-
 Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-methoxyindole)-2'-(1',3',3',5'-tetramethylindole)-.alpha.-.gamma.-dicyano-
 Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-methoxyindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
 Trimethinecyanine chloride, [2-(1,3,3-trimethyl-5-methoxyindole)][2-(1,3,3-trimethyl-5-methoxyindole)]-.alpha.-cyano-

Trimethinecyanine methyl sulfate, 2-(1,3,3-trimethyl-5-methoxyindole)-2'-
(1'-methylbenzothiazole)-.alpha.-cyano-

L21 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1961:6027 HCAPLUS
DN 55:6027
OREF 55:1152g-h
ED Entered STN: 22 Apr 2001
TI Kinetics of isotope exchange in heterogeneous systems with multiple equilibria
AU Scheffer, F.; Ulrich, B.; Benecke, P.; Sandler, W.
CS Univ. Göttingen, Germany
SO Naturwissenschaften (1960), 47, 321
CODEN: NATWAY; ISSN: 0028-1042
DT Journal
LA Unavailable
CC 2 (General and Physical Chemistry)
AB The exchange of P between hydroxyapatite and a solution of (P32O4)--- was determined and graphically analyzed into 4 kinetically-distinct reactions. There were 4 phosphate fractions in the surface of the apatite. The amts. (mg. P/g. apatite) and exchange consts. (mg. P/g. apatite. min.) were: 1.61, 1.3; 0.97, 5.4 .times. 10-2; 1.10, 5.7 .times. 10-3; and 1.16, 6.1 .times. 10-4, resp.
IT Reaction kinetics and(or) velocity
(of exchange, of P between hydroxylapatite and phosphates)
IT Exchange reactions
(of phosphorus, between hydroxylapatite and phosphates)
IT Phosphates
(phosphorus exchange between hydroxylapatite and)
IT 7723-14-0, Phosphorus
(exchange of, between hydroxylapatite and phosphates)
IT 1306-06-5, Hydroxylapatite
(phosphorus exchange between phosphates and)

L21 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1961:6026 HCAPLUS
DN 55:6026
OREF 55:1152e-g
ED Entered STN: 22 Apr 2001
TI Gas-phase reactions of recoil carbon-14 in anhydrous ammonia
AU Yang, John Y.; Wolf, Alfred P.
CS Brookhaven Natl. Lab., Upton, NY
SO Journal of the American Chemical Society (1960), 82, 4488-92
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA Unavailable
CC 2 (General and Physical Chemistry)
AB Neutron-capture reactions of N in anhydrous NH3 were studied in the gas phase. A unique feature of the reactions was a high and specific yield of methane-C14. A process of H abstraction was proposed to explain results. The yield was not affected by the addition of inert gases. Carbon-14 assay was obtained in a Bernstein-Ballentine counter in the proportional region. Qual. detection and quant. determination of carbon-14 activities was accomplished by the Wolfgang and Rowland gas chromatog. flow counting method. There was no evidence of free-radical products. Reactions of the recoil carbon in CH4 and methylamine gave a complex mixture of radioactive products.
IT Ethane, labeled with C14
(formation from recoil C14 reactions in NH3 and methylamine)
IT Methylamine-C14
(formation of, from recoil C14 reactions in methylamine)
IT 74-89-5, Methylamine
(carbon-14 (recoil) reaction in)
IT 7664-41-7, Ammonia
(carbon-14 recoil reaction in)

IT 2772-68-1, Methane-C14
(formation and reactions of, in neutron-bombarded NH3)
IT 51-90-1, Carbon-C14 dioxide
(formation from recoil C14 reactions in NH3)
IT 7183-57-5, Acetonitrile-2-C14
(formation of, from recoil C14 reactions in methylamine)
IT 14762-75-5, Carbon, isotope of mass 14
(gas-phase reactions of recoil, in NH3)
IT 7727-37-9, Nitrogen
(neutron capture by, in NH3, recoil C14 reactions from)
IT 12586-31-1, Neutron
(nitrogen bombardment by, in NH3, recoil C14 reactions from)

=> b home

FILE 'HOME' ENTERED AT 10:01:03 ON 11 MAR 2005

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